

Study of mutagenic effects of Sodium Erythorbate

(FDA #71-68)

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MUTAGENIC EFFECTS OF  
SODIUM ERYTHORBATE

Ascorbates

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STUDY OF MUTAGENIC EFFECTS OF  
SODIUM ERYTHORBATE (FDA No. 71-68)

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## INTRODUCTION

Under contract to the Food and Drug Administration, SRI is examining the mutagenicity of selected chemical compounds (Contract No. FDA 73-215). This report describes the results of tests conducted on sodium erythorbate (FDA No. 71-68). It presents detailed descriptions of the methodologies used to perform these tests.

Four methods were used for evaluating the genetic hazards of the test compounds. These were: (1) host-mediated assay, (2) in vitro microbial assay, (3) dominant lethal test, and (4) mouse translocation test. Each procedure is described in detail below.

For the compound under consideration in this report, single and repeated oral administrations were performed at three concentrations for both the host-mediated assay and dominant lethal test. The amounts were: (1) a maximum level--the calculated LD<sub>5</sub> or 5 g/kg (whichever was lower); (2) an intermediate level--1/10 of the LD<sub>5</sub> or 1 g/kg (whichever was lower); and, (3) a low level--1/100 of the LD<sub>5</sub> or 200 mg/kg (whichever was lower). For sodium erythorbate the maximum level was 5 g/kg, the intermediate level 1 g/kg, and the low level 200 mg/kg.

In the mouse translocation test, the test material was fed in the diet at two dosage levels. These were: a high level--the calculated LD<sub>5</sub> or 5 g/kg, whichever was lower, and a low level--1/10 of the LD<sub>5</sub> or, in the case where 5 g/kg was used, 1 g/kg. For sodium erythorbate the high level was 5,000 ppm, and the low level was 1,000 ppm.

## SUMMARY

### Host-Mediated Assay - Mouse

Sodium erythorbate was not mutagenic in the host-mediated assay using Salmonella typhimurium TA1530, nor did it increase the mitotic recombination frequency in the host-mediated Saccharomyces cerevisiae D3.

### In vitro Assay

In the in vitro assays, sodium erythorbate was not mutagenic to S. typhimurium strains TA1530, TA1535, TA1536, TA1537, and TA1538, either in the presence or absence of metabolic activation. At a concentration of 5%, sodium erythorbate did not increase the mitotic recombination frequency of S. cerevisiae D3.

### Dominant Lethal Test - Rat

This experimental procedure produced no consistent responses to suggest that sodium erythorbate (FDA No. 71-68) is mutagenic to the rat. The positive reference compound, TEM, a known mutagen, generally produced mutagenic responses from the first through the fifth weeks of the experiment, as expected. Mathematical treatment of the dominant lethal data, conducted according to a statistical program outlined by FDA, failed to show consistent significant differences (that could be attributed to an effect of sodium erythorbate) at  $P < 0.01$  or  $P < 0.05$ .

### Translocation Test - Mouse

An extensive translocation study of sodium erythorbate (FDA No. 71-68) was conducted in mice to investigate whether heritable mutagenic events occur when the compound is repeatedly ingested over an extended period.

Sodium erythorbate was administered in the diet for seven weeks at two concentrations (1,000 and 5,000 ppm), forty adult male mice per group. A similar number of control mice received the diet only during this

time, while a positive control group received triethylenemelamine (TEM) for four weeks in the drinking water. Each male was bred to two virgin females to produce an F<sub>1</sub> generation, the males of which were raised to maturity. One hundred F<sub>1</sub> males per treatment level were bred to three virgin females. Evaluation of the pregnant females provided data that identified the nonbreeders, presumptive steriles, and partially steriles in each treatment group. Rebreeding these suspect animals reduced the number to three control, 20 TEM, and three sodium erythorbate-treated males. Three controls, three TEM, and one sodium erythorbate (5,000 ppm) F<sub>1</sub> males were subjected to cytogenetic testes evaluation of meiotic cell preparations. None of the control or sodium erythorbate meiotic chromosomes showed heritable cytogenetic abnormalities, while all three TEM males each had single reciprocal translocations.

Under the conditions of this study, it is concluded that sodium erythorbate (FDA No. 71-68) administered in the diet over a seven-week period does not induce translocation heterozygosity in male mice.

## HOST-MEDIATED ASSAY - MOUSE

### Background

The host-mediated assay combines the advantages of the mammalian metabolic system with those of microbial systems for detecting mutagens or metabolites of chemicals that are not mutagenic. Microbial assays allow both the exposure of large cell populations to the chemical being tested and the determination of mutation frequencies. In addition, microbial assays are relatively inexpensive compared with other systems of detecting carcinogens. The mammalian organisms provide the metabolic activities present in mammals that are absent in microorganisms. For example, dimethylnitrosamine is not mutagenic on direct exposure to bacteria but is mutagenic in the host-mediated assay.

In the host-mediated assay, the indicator microorganism is injected into the host's peritoneal cavity at the same time the host receives the test compound by some other route, such as oral intubation or intramuscular injection. The microorganism is allowed to incubate while the animal metabolizes the compound. After the organism has had a chance to incubate, it is removed from the animal and assayed for mutations. Theoretically, during the incubation period, the organism is then exposed to whatever metabolite normally might reach the various tissues in the animal. By comparing the mutagenicity of the compound in vitro with that obtained in the host-mediated assay, it is possible to determine if any activation or deactivation of the test compound has occurred during metabolism in the animal. For this report, a detailed description of the methodology has been provided even though it has been generally outlined in the literature (e.g., E. Zeiger and D. Brusick. The host-mediated assay--a protocol for Salmonella and Saccharomyces. Newsletter of the Environmental Mutagen Society 5, 32-34, 1971).

## Materials and Methods

### Microorganisms

A histidine auxotroph of Salmonella typhimurium TA1530 was used in these studies to measure biochemical reversion mutations. The yeast Saccharomyces cerevisiae D3 which is a diploid organism heterozygous for two linked genes (ade2 and his8), was used to measure for mitotic recombination.

### Animals

Male Swiss albino mice, weighing an average of 28-30 g, were used for this study and maintained on a diet of Purina Lab Chow. The mice were obtained from Simonsen Laboratories, Gilroy, California.

### Preparation of Microorganisms for Inoculation

The Salmonella strains were maintained on tryptone-yeast extract agar slants. To prepare the organism for inoculation into mice, a small inoculum from an agar slant was added to a broth consisting of 1.0% tryptone and 0.5% yeast extract. This culture was incubated for 24 hr at 37°C. The resulting suspension of cells was then adjusted to a concentration of  $3-5 \times 10^8$  viable cells/ml using a spectrophotometer.

The yeast strain was maintained on yeast extract (0.5%) glucose (5.0%) agar slants. To prepare the yeast for inoculation into mice, a small inoculum from the agar slant was added to a broth consisting of 5% glucose, 0.5% yeast extract, and 0.2% peptone. This culture was incubated on a rotary shaker at 30°C for 24 hr. The cell concentration was adjusted spectrophotometrically to a concentration of  $1-3 \times 10^8$  viable cells/ml before inoculating the animals.

### Inoculation of the Mice

Two ml of the appropriate organism was inoculated into the peritoneal cavities of the mice using a 23-gauge needle. The area of inoculation was washed with ethanol before injection. The test compound was administered simultaneously with the inoculation.

#### Administration of Test Compound

The test compounds were administered by oral intubation using an 18-gauge intubating needle. The compound was dissolved in water or suspended in Mazola pure corn oil to a concentration requiring a 0.4 ml volume for each intubation.

The positive control compound for Salmonella, dimethylnitrosamine (DMNA), was dissolved in 10% ethanol to a concentration that would provide a 30-g mouse with a dose of 100 mg/kg. The positive control for the yeast, ethyl methane sulfonate (EMS), was dissolved in sterile saline to give a dose of 350 mg/kg/mouse. Positive control compounds were administered in 0.10 ml volumes by intramuscular injection.

Negative controls were run in all experiments. The negative control consisted of administering the solvent used for the test compound by oral intubation.

#### Autopsy and Recovery of Organisms

All test groups were sacrificed 4 hr after inoculation of the organism and administration of the test compound. The mice were sacrificed by cervical dislocation, their exterior abdominal regions were washed with ethanol, and 2 ml of sterile saline were injected into the peritoneal cavity of each mouse. The peritoneal cavity was opened aseptically, and the exudate withdrawn using a tuberculin syringe without a needle. The peritoneal exudates from each mouse were treated individually. They were placed in sterile tubes and immediately put in an ice bath. All plating of the samples was begun immediately after removal from the mouse.

#### Enumeration of Total Viable and Mutant Cells

Tenfold serial dilutions were made for each peritoneal exudate by serially adding 0.5 ml of sample to 4.5 ml of sterile saline. For the bacteria, a concentration series from  $10^0$  to  $10^{-7}$  was prepared and for the yeast a series from  $10^0$  to  $10^{-5}$ .

To enumerate the total viable bacteria, the  $10^{-6}$  and  $10^{-7}$  dilutions were plated by adding 0.2 ml of sample/plate to 3 separate plates. Each sample was spread over the surface of the plate using a sterile, bent glass rod. The medium used to enumerate total viable cells was as follows:

Bacteria Complete Medium

Tryptone	1.0%
Yeast extract	0.5%
Agar	2.0%
Dist. H <sub>2</sub> O	to desired volume

To enumerate the revertant mutant bacterial cells, the  $10^0$  (and the  $10^{-1}$  dilution if a large number of revertants were expected) dilutions were plated as described for enumerating the total bacteria. Six plates were used for each sample. The medium used for enumerating mutants was as follows:

Bacteria Minimal Medium

(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	0.2%
K <sub>2</sub> HPO <sub>4</sub>	1.4%
KH <sub>2</sub> PO <sub>4</sub>	0.6%
Na citrate	0.1%
MgSO <sub>4</sub>	0.02%
Biotin	0.5 µg/ml
Glucose	0.5%
Agar	2.5%
Dist. H <sub>2</sub> O	to volume

The glucose and biotin were sterilized separately and added to the autoclaved salt solution.

All bacteria were incubated at 37°C, the bacteria complete plates for 18 hr, and the bacteria minimal for 40 hr. If the plates could not be counted at this time, they were refrigerated.

To enumerate the yeast (both total viable cells and mitotic recombinants), samples from the  $10^{-2}$  to  $10^{-5}$  dilutions were plated on a yeast complete medium. They were plated in the same manner as described for the enumeration of the total bacteria. Total viable counts were

usually obtained by counting the  $10^{-5}$  or  $10^{-4}$  plates. The number of mitotic recombinant colonies was usually obtained by scanning the  $10^{-3}$  or  $10^{-2}$  plates with a dissecting scope at 10 X. The mitotic recombinants were seen as either red colonies or as red sectors on a normally white yeast colony. The prominence of the mitotic recombinants was enhanced by refrigerating for several days following the normal incubation of the yeast at 30°C for 48 hr.

The medium used for plating yeast was as follows:

<u>Yeast Complete Medium</u>	
Yeast extract	0.5%
Peptone	0.35%
Glucose	2.0%
Agar	2.5%
$\text{KH}_2\text{PO}_4$	0.15%
$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$	0.05%
$(\text{NH}_4)_2\text{SO}_4$	0.45%
Dist. $\text{H}_2\text{O}$	to desired volume

#### Data Handling

The data from all mice were used unless a great deal of contamination occurred or low recovery rates were obtained, possibly because the organism might have been injected into some organ rather than the peritoneal cavity. The number of colony forming units (CFU) or mitotic recombinants was determined by:

$$\frac{\text{No. CFU/plate}}{\text{No. plates}} \times \frac{1}{0.2} \times \frac{1}{\text{dilution factor}} = \text{CFU/ml in undiluted exudate}$$

The mutation frequency (MF) was calculated by:

$$MF = \frac{\text{total mutant cells}}{\text{total population}}$$

### Treatment Groups

All treatment groups, including the positive and negative controls, consisted of 10 mice. The method used to determine concentrations of test compound is described in the section on the dominant lethal test.

The following groups were tested for all three organisms:

<u>Group</u>	<u>Treatment</u>	<u>Day of Treatment on which Test Organism was Injected</u>
1	Maximum tolerated dose	1
2	Intermediate dose	1
3	Low dose	1
4	Appropriate positive control	1
5	Appropriate negative control	1
6	Maximum tolerated dose	5
7	Intermediate dose	5
8	Low dose	5
9	Appropriate negative control	5

For testing FDA No. 71-68, the following doses were used:

Maximum dose - 5 g/kg  
Intermediate dose - 1 g/kg  
Low dose - 200 mg/kg

### In vitro Tests

The method described by Ames was used to determine in vitro mutagenicity for the bacteria (B. N. Ames, W. E. Durston, E. Yamasaki, and F. D. Lee. Proc. Nat. Acad. Sci. U.S.A. 70, 2281-2285, 1973).

To determine the in vitro mitotic recombination frequency of the test compound on the yeast, it was first necessary to determine what level of the test compound gave a 50% survival of the organism after a 4-hr exposure at 30°C. If the compound showed no lethal effects, a concentration of 5.0% w/v was used. In the actual test for mitotic recombination, the yeast (approximately  $5 \times 10^7$  cells/ml) was exposed to the appropriate concentration of compound for 4 hr, and then samples were plated as described for determining mitotic recombinants in the section on host-mediated assay. The mitotic recombination frequency is expressed as sectors per  $10^5$  survivors. This was compared with a negative control.

In the yeast in vitro studies, EMS was employed as the positive control. In the bacterial in vitro assays, 2-fluorenamine was employed as the positive control for metabolic activation.

### Results and Discussion

#### Host-Mediated Assay

Table 1 summarizes the results of the host-mediated assay of sodium erythorbate (FDA No. 71-68) with Salmonella typhimurium TA1530. (The data for individual mice are presented in Tables 3 and 4.) In the single treatment regimen, a dose of 200 mg of sodium erythorbate per kg of mouse body weight resulted in a 3.6-fold increase in the average frequency of his<sup>+</sup> reverse mutations compared to the negative controls. We do not believe this increase is significant for two reasons: (1) higher doses did not give significant increases in the reverse mutation frequency, and (2) in the multiple treatment regimen, the reverse mutation frequency was not significantly increased at 200 mg/kg or the higher doses. It should be noted that the recovery of S. typhimurium in the 200 mg/kg dose of the single treatment regimen was poor compared to the rest of the test doses and the control. We conclude that sodium erythorbate is not mutagenic to S. typhimurium strain TA1530 at the doses tested when given as a single or multiple oral treatment. The known mutagen DMNA significantly increased the reverse mutation frequency of TA1530.

Table 2 summarizes the host-mediated assay results with Saccharomyces cerevisiae D3. (The data for individual mice are presented in Tables 5 and 6.) Sodium erythorbate did not increase the mitotic recombination frequency of S. cerevisiae D3 at the doses tested when given as a single or multiple oral treatment. The known mutagen EMS significantly increased the mitotic recombination frequency of S. cerevisiae D3.

#### In vitro Microbial Assay

In the in vitro assays, sodium erythorbate was not mutagenic to S. typhimurium either in the presence or absence of the metabolic system (Table 7). The number of histidine positive revertants on

TA1538 with metabolic activation was increased in the first experiment (37 compared with the control value of 11) but was not higher in the second experiment. At a concentration of 5%, sodium erythorbate did not increase the mitotic recombination frequency of S. cerevisiae D3.

## DOMINANT LETHAL TEST - RAT

### Background

Dominant lethal assays of compounds suspected of causing major genetic damage in animals have been carried out, for the most part, in mice. One exception was a comparative study by Bateman with mice and rats to evaluate the dominant lethal effect of triethylenemelamine (*Genet. Res. Camb.* 1, 381-392, 1960). Although there are cost savings in using the mouse rather than the rat, the latter has experimental advantages in providing more definitive information when attempting to assess the incidence of early fetal deaths. Also, corpora lutea counts in the mouse are difficult and relatively imprecise (S. S. Epstein and G. Rohrborn, *Nature* 230, 469-470, 1971). For this project, adult Sprague-Dawley-derived rats, from a closed random-bred colony, were used for the acute toxicity determinations as well as the dominant lethal assay.

In the mammalian test procedure, the compound under investigation was administered orally either once or on five successive days to proven male breeders. Following dosing, each male was mated with two adult female rats for seven days. The females were then removed, and new females again were added for another week of breeding. This sequence continued for eight weeks. Thus, the procedure is designed to indicate possible mutagenic effects on the male sperm, with the normal female acting as a carrier to demonstrate abnormalities that may have occurred in the male. Effects were evaluated by examining the state of fetal development during the middle to latter stages of gestation.

The experimental approach is presented below in a step-by-step manner to ensure clarity and an understanding of the preciseness of procedures used in this phase of the program.

## Materials and Methods

### Animals

Adult male and female Sprague-Dawley-derived rats were supplied by Simonsen Laboratories, Gilroy, California. The males were proven breeders, while the females were of virgin stock. Purina Lab Chow and water were available at all times.

### Chemical Supply

All compounds or natural materials were supplied by the Food and Drug Administration. Each compound or natural material was provided in a ready-to-use form and was identified by both name and FDA code number. Sufficient quantities to complete all aspects of the experimental program were received. Excess supplies were placed in storage, should they be needed for future reference.

### Solubility Studies

Solubility of each compound or natural material was investigated using such agents as water, propylene glycol, polyethylene glycol, corn oil, tricaprylin, carboxymethylcellulose, or methylcellulose (Methocel) to determine the most appropriate vehicle for administration. Because of the low toxicity of most materials and the consequent high dosages required, many of the test materials were administered as suspensions.

### Acute Toxicity (Single and Multiple Dose)

Although acute toxicity information on some of the compounds was available in the literature, confirmatory tests were done to obtain an LD<sub>50</sub> under our laboratory conditions and for this strain of rat. If no data were available, a broad, range-finding dose regimen was conducted, followed by an accurate determination of the oral LD<sub>50</sub>.

A range-finding dose regimen was conducted using the acute data to determine an accurate multiple dose LD<sub>50</sub>. Nonstarved animals were used throughout this part of the study because of the multiple dosing regimen.

### Dosage Selection

In selecting the three dosage levels for the experimental study, two approaches were used:

- (1) If a finite LD<sub>50</sub> was obtained, the highest dose level was the calculated LD<sub>5</sub>. The intermediate dose was 1/10 of the calculated LD<sub>5</sub>, and the lowest dose was 1/100 of the calculated LD<sub>5</sub>.
- (2) If the LD<sub>50</sub> was greater than 10 g/kg (a mutually agreed on upper limit), the highest dose was 5 g/kg; the lowest dose was 200 mg/kg; and the intermediate dose was 1 g/kg. These guidelines were used for both single and multiple dose experimental study groups.

### Control Groups (Vehicle and Positive)

A vehicle control group (corn oil, water, Methocel, etc.) was included in each experimental study. Vehicle control animals were included in both the acute and subacute studies. In this manner, breeding and implant data were obtained for each vehicle control and were used as reference comparisons for the experimentally treated animals, both the single and multiple treatment groups. The positive reference control was the known mutagen, triethylenemelamine (TEM), given at a dose of 0.2 mg/kg as a single i.p. injection. Breeding and implant data were obtained for eight weeks.

### Acute Studies (Single Dose)

In an acute study, ten experienced breeder male rats per treatment group were administered a single oral dose of test compound. Controls were treated as previously described. Within two or three hours of dosing, each male was presented with two virgins of breeding age for a period of seven days. Females were replaced weekly over a total mating period of eight weeks.

### Subacute Studies (Multiple Dose)

For the subacute assay, the experimental parameters used in the acute test were employed, with three exceptions: (1) five dosings

were given at 24-hour intervals; (2) weekly mating periods lasted for seven rather than eight weeks; and (3) the same positive control group used for the acute dosing also served as the reference group for the subacute assay.

#### Necropsy

Starting two weeks after the first day of breeding, one-fourth of the pregnant females in each group were sacrificed on four successive days. This schedule allowed for sacrifice of females between 11 and 18 days of pregnancy. A complete autopsy of each female was done to determine if there was intercurrent infection, since such a condition can induce preimplantation loss and early fetal deaths (G. Rhorborn, *Humangenetik* 6, 345, 1968).

#### Observations

At time of sacrifice, each female was scored for early fetal deaths, late fetal deaths, living fetuses (all of which provide a total implant score), corpora lutea, and pre-implantation loss (determined by subtracting the total implant score from the total corpora lutea score).

#### Evaluation

The following parameters indicate effects in dominant lethal studies: total implants (live fetuses plus early and late fetal deaths), total dead (early and late fetal deaths), dead implants per total implants, and pre-implantation loss (calculated as the difference between the total corpora lutea and total implant counts). We also evaluated total corpora lutea because a significant change of this parameter could influence the significance of the pre-implantation loss. Total implants, total dead, total corpora lutea, and pre-implantation loss parameters were analyzed for significance by the t-test.

The index of dead implants per total implants was analyzed statistically by the t-test on arcsine (or angular) transformed data, as described in Experimental Design (Theory and Application),

by Walter T. Federer, The Macmillan Company, 1955. This index was computed for each female.

The assumptions underlying the analysis of variance and the usual tests of significance are discussed by C. Eisenhart (*Biometrics* 3, 1-21, 1947); W. G. Cochran (*Biometrics* 3, 22-38, 1947) discusses the consequences when the assumptions underlying the analysis of variance are not fulfilled. These two papers, plus one by Bartlett (*The use of transformations. Biometrics* 3, 39-52 and 96, 1947), provide background information on this subject.

#### Results and Discussion

Single and multiple dose toxicity data are presented below.

##### Oral Toxicity - Rat and Mouse

Compound: Sodium erythorbate

FDA No.: 71-68

Single dose<sup>a</sup> > 10 g/kg

Multiple dose<sup>b</sup> > 5 g/kg

<sup>a</sup>Ten male, Sprague-Dawley rats, weighing 301-378 grams each, and ten male, Swiss Webster mice, weighing 19-27 grams each, were fasted overnight and then administered orally specified amounts of the candidate compound dissolved or suspended in water.

<sup>b</sup>Ten male, nonfasted Sprague-Dawley rats, weighing 325-378 grams each, and five male, nonfasted Swiss Webster mice, weighing 21-29 grams each, were administered orally specified amounts of the candidate compound dissolved or suspended in water.

After an evaluation of the toxicity data, dosage levels for the mutagenesis assays were selected as follows:

Single dose--5 g/kg, 1 g/kg, and 200 mg/kg

Multiple dose--5 g/kg, 1 g/kg, and 200 mg/kg.

Throughout the experiment, the biological criteria used to evaluate mutagenic effects in the rat showed no consistent responses that could be attributed to treatment. There were occasional statistical differences between control and sodium erythorbate-dosed groups, but they were random and did not suggest a time or dose-response effect.

Table 9 presents summary data on the implantations per pregnant female, Table 10 summarizes dead implants per pregnant female, Table 11 summarizes dead implants per total implants, Table 12 summarizes corpora lutea per pregnant female, and Table 13 summarizes pre-implantation loss per pregnant female.

Appendix A presents a description of the statistical analysis procedures used for dominant lethal tests with an explanation of the computer printouts.

Appendix B contains computer printouts of the raw data and the statistical analyses.

Careful review and statistical evaluation of the data do not show sodium erythorbate (FDA No. 71-68) to be a mutagen in the rat by the dominant lethal test.

## HERITABLE TRANSLOCATION TEST - MOUSE

### Background

Human populations frequently are exposed to man-made chemicals for extended periods, and often at borderline detectable levels. To evaluate the genetic hazards of such chemicals, it is considered prudent that such materials be studied in mammalian systems at several dosages in order to maximize detection of a mutagenic response.

Chemical induction of chromosomal aberrations in the mouse is an important experimental tool, in view of the many human genetic defects that are due to various chromosomal anomalies. To date, evaluations of chemically induced chromosomal aberrations have been attempted with the dominant-lethal test and cytogenetic studies of somatic and germinal cells of certain mammals. Although these test procedures can provide useful information, they do not measure heritable genetic effects. Obviously, the most important mutagenic effects are permanent and transmissible. A need has existed, therefore, for a method which can reliably identify compounds that cause heritable chromosomal aberrations in mammalian systems. The mouse translocation procedure would appear to be such a system.

A well-defined translocation test will determine the fertility of an  $F_1$  male population derived from  $F_0$  males treated with a test agent. Confirmation of a sterile or a partially sterile response can be obtained by cytological examination of the germ cells from suspected males. Sterility and partial sterility are closely correlated with the induction of translocation heterozygotes.

The procedure used in conducting this translocation test was based on experimental techniques described by Leonard and DeKnudt (Mutation Research 9, 127, 1970), Cattanach et al (Mutation Research 6, 297, 1968), Falconer et al (J. Genetics 51, 81, 1952), and Generoso (Meeting Environmental Mutagen Society, March 1971, p. 9, Abstracts); modifications of approach were made by staff of this laboratory in consultation with staff of the Genetic Toxicology Branch, Bureau of Foods, FDA.

## Materials and Methods

### Animals

Adult male and female ICR/SIM mice were supplied by Simonsen Laboratories, Gilroy, California. The F<sub>0</sub> males, used in the test compound treatment groups, were three- to four-month-old proven breeders. Females, used in the breeding phases, were 9- to 10-week old virgins.

### Chemical Supply

All materials for evaluation were supplied by the Food and Drug Administration with the exception of N-methyl-N'-nitro-N-nitroso-guanadine (MNNG), which was purchased by SRI from Aldrich Chemical Co., San Leandro, California. Sufficient quantities to complete all aspects of the experimental program were received. Excess supplies have been placed in storage, should they be needed for future reference.

### Acute Toxicity (LD<sub>50</sub>)

Although acute toxicity information on some of the compounds was available in the literature, confirmatory tests were conducted to obtain an LD<sub>50</sub> under our laboratory conditions and for this strain of mouse. If no data were available, a broad, range-finding dose regimen was conducted, followed by an accurate determination of the oral LD<sub>50</sub>.

### Dosage Selection

Two treatment levels were used in the translocation test. In selecting these levels, two approaches were used:

- (1) If a finite LD<sub>50</sub> response was obtained, the maximum dose was the calculated LD<sub>5</sub>; the lower dose was 1/10 of the calculated LD<sub>5</sub>.
- (2) If the LD<sub>50</sub> was greater than 10 g/kg (a mutually agreed-upon upper limit), the maximum dose was 5 g/kg; the lower dose was 1 g/kg.

#### Reference Control

Two reference control groups were included in this contract program. One was run at the beginning of the series of translocation tests; the other was done at the end of the test series. In this manner, breeding and implant data were obtained at two separate time periods, as well as providing an increased reference-control data base.  $F_0$  males in these groups were fed a finely ground commercial laboratory diet with corn oil added at a level of 2%; thereafter, all animals in these groups were fed a commercial pelleted diet. Water was available ad libitum. Control groups were treated in the same manner as compound test groups.

#### Positive Control

A positive control was run concurrently with a negative control.

For this group, the known mutagen triethylenemelamine (TEM) was administered initially in the drinking water (0.32 mg/l) for four weeks, at an approximate ingestion dose of 0.062 mg/kg/day. Fresh TEM solutions were prepared daily. A commercial pelleted diet was available at all times.

In this exploratory study, forty treated males bred to 81 females produced only 11 litters. The large number of sterile males and the small size of the litters showed that the dosage level was too high to allow production of sufficient numbers of offspring for adequate evaluation. A confirmatory TEM study using the same dosage regimen had been underway for two weeks when the first TEM data became available. TEM concentration was immediately reduced for the final two weeks to 0.124 mg/l, an intake level of approximately 0.024 mg/kg/day. Discussion of the results for both TEM experiments is presented in Results and Discussion.

#### Administration of Test Compounds

The candidate compound was fed in the diet to adult male mice for seven weeks. An appropriate amount of compound initially was dissolved or suspended in corn oil; then the compound-oil concentrate

was added at a level of 2% to a finely ground commercial diet of known composition. The use of corn oil assured even distribution of the compound and presented stratification of the test material in an otherwise dry diet. Diets prepared at two-week intervals were refrigerated at 4°C until fed to the animals. In addition, the diet was replaced in the feed containers every other day to minimize the possibility of compound loss.

#### Genetic Tests

After seven weeks of dietary compound treatment or four weeks of TEM drinking-water treatment, approximately 40 treated males per group were mated, each with two adult virgin females; after two weeks, each female was housed individually and allowed to litter. Impregnation time was based upon the date of parturition. Litters from the second week of breeding were discarded. Weanling females were discarded while males were raised to maturity (10-12 weeks). At maturity, 100 F<sub>1</sub> males per group were randomly selected and housed individually. Three adult virgin females were bred to each F<sub>1</sub> male for a period of two weeks; examinations were made daily for the presence of vaginal plugs. Females were sacrificed 14 days after mating; a uterine analysis was performed to determine the number of total, live, and dead implants.

#### Criteria for Classification of a Male as Sterile or Partially Sterile

An in-depth statistical review of breeding data from control animals was performed by Theodore W. Horner, Statistical Consultant, Division of Mathematics, Bureau of Foods, Food and Drug Administration. This review of a normal litter size distribution and discussions between the FDA and SRI technical staffs provided the necessary information for establishing the classification criteria for a male as sterile or partially sterile.

Classification of a F<sub>1</sub> male mouse as sterile or partially sterile was made according to the following criteria:

- o "Partially Sterile" Male

- (1) If all three females are pregnant, each female must have 9 or fewer live implants---with at least one female having 6 or fewer live implants.
- (2) If two of three females are pregnant, both females must have 9 or fewer live implants---with one female having 6 or fewer live implants.
- (3) If only one of three females is pregnant, this female must have 6 or fewer live implants.

- o "Sterile" Male

- (1) None of three females pregnant---previously identified by presence of a vaginal plug.

Any  $F_1$  male that did not fit one of the above-mentioned selection criteria was considered "normal".

$F_1$  males found to be sterile or partially sterile were held for future evaluation (i.e., additional breeding and/or cytogenetic study of meiotic chromosomes).

#### Evaluation

A careful review of the  $F_0$  breeding and litter data was conducted to determine if there were possible correlations between compound treatment and breeding performance, litter size, or sex distribution.

$F_1$  males were identified as sterile or partially sterile by the evaluation method outlined above. Individual data were totaled to give the number of observed  $F_1$  males (presumptive translocations) per treatment based on the breeding of 300 females per group. Various parameters were evaluated such as percent pregnancies, average litter size, average number of males per treatment bred to females with 0 - 5 or more dead implants, average number of females per treatment with 0 - 5 or more dead implants, percent per treatment with plugs, and percent pregnancies per treatment with and without plugs.

### Meiotic Cell Cytogenetic Studies

Male mice that showed characteristics of presumptive translocation after two breedings were reviewed by FDA and SRI staff members. Selected males were then evaluated for chromosomal translocations by examination of meiotic preparations of the testes. Cytogenetic studies were conducted by Dr. K. S. Lavappa, Department of Cell Culture, American Type Culture Collection (ATCC), Rockville, Maryland.

The two testes from each animal were weighed and examined separately. Meiotic preparations were made with the air-drying technique. Spermatocytes in diakinesis-metaphase I were examined for the presence of translocations. From each testis, four slides were examined and 40 spermatocytes were scored per testis.

### Results and Discussion

#### Acute Toxicity (LD<sub>50</sub>)

The LD<sub>50</sub> in mice was > 10 g/kg with the multiple dose (five consecutive days) being > 5 g/kg. Based on the LD<sub>50</sub> data, the following dosage levels for the translocation study were selected:

Maximum dose      5,000 mg/kg

Minimum dose      1,000 mg/kg

#### F<sub>0</sub> Generation

Although information about the F<sub>0</sub> generation should be included in the evaluation of translocation data, often it has not been presented or discussed in the reporting of a translocation study. Information on breeding performance of the mouse strain used, litter size or distribution, sex distribution, and the effect of compound treatment on the above, can provide valuable background data.

Table 16 summarizes the breeding and litter performance of the F<sub>0</sub> generation. The TEM I experiment produced a high degree of sterility. Therefore, it was necessary to reduce the concentration of TEM in an ongoing second experiment. By reducing TEM in the drinking water to one-third the original concentration, the second experiment provided

us with a satisfactory mutagenic response. No adverse effects were observed in either of the sodium erythorbate (FDA No. 71-68)-treated groups. Both control groups performed in a normal manner for this strain of mouse.

Table 17 presents litter-size distribution of the F<sub>0</sub> generation mice. Although litter sizes were smaller in the TEM-treated groups, other groups had normal litter-size distributions.

#### F<sub>1</sub> Generation

Table 18 summarizes breeding data for the F<sub>1</sub> generation mice. In the TEM I experiment, there was a decrease in the percentage of pregnancies. Other groups responded normally for the ICR/SIM mouse strain.

Litter-size distributions are presented in Table 19. As was the case with the F<sub>0</sub> generation, TEM groups had smaller litters. Other groups were normal.

Dead implants per F<sub>1</sub> male are presented in Table 20; dead implants per female are summarized in Table 21. In both TEM studies, there were greater numbers of females with 3 to 5 dead implants than in the control or sodium erythorbate groups. Dead implant incidence for these latter groups was low and similar.

Table 22 presents a summary of the breeding results, by group, of those F<sub>1</sub> males found to be sterile or partially sterile. In Table 23, the individual F<sub>1</sub> animals are identified by number and treatment. TEM groups I and II showed an incidence of this response of 75% and 15%, respectively; the reference control and sodium erythorbate groups had an incidence ranging from 1% to 3%. Females bred to partially sterile males in the TEM groups showed an increased number of dead implants along with a lesser number of viable implants. This condition was not seen in the reference control or sodium erythorbate groups. Individual data on these animals can be found on the project "Translocation Data Sheets," which will be submitted separately to FDA.

Tables 24 to 26 present summary breeding and rebreeding data of presumptive F<sub>1</sub> males. In the first reference control experiment,

five males were nonbreeders and one met the criteria of "presumptive". When these animals were rebred, only two of these remained as nonbreeders. The second reference control experiment provided similar type responses. Out of 100 F<sub>1</sub> males in this group, six were found to be presumptive mutants after the first breeding schedule; the rebreeding of these males showed only one animal remaining as a presumptive. This male (No. 1455) had two females with seven viable implants per female and one female with plugs but no pregnancy; the rebreeding with three new females showed no evidence of mating (Table 24).

In Table 25, the effect of TEM producing heritable translocations is strongly implied. Eight F<sub>1</sub> males from the first TEM study produced six presumptive mutants by our evaluative criteria. Rebreading of these six a second and third time continued to show a presumptive mutant condition for all six animals. For the second TEM experiment with 112 F<sub>1</sub> males, 17 of these animals fit the criteria of "presumptive" after the first breeding schedule. When these 17 were rebred to new females, 14 of the males still remained as presumptive mutants.

For sodium erythorbate (Table 26), 100 F<sub>1</sub> males (from the 1,000 ppm dietary treatment of the F<sub>0</sub> generation) showed two animals to be presumptive mutants after the first breeding. When these two were rebred, only one male still remained in the presumptive mutant category. This single animal showed no evidence of mating with any of its six females. For the 5,000 ppm sodium erythorbate group, six males out of the 100 tested showed evidence of presumptive mutancy after the first breeding. When the six were rebred, only two animals still remained in this category; one had shown no evidence of mating throughout two breeding regimens, and the other remained in the partially sterile category.

#### Cytogenetic Studies

Table 27 shows the findings from the cytogenetic evaluation of meiotic cell preparations from those F<sub>1</sub> males selected by the FDA project officer for examination. Dr. Lavappa found the two control I, one control II, and one 5,000 ppm sodium erythorbate mice to be cytogenetically normal. The three TEM I mice, however, each had single reciprocal translocations. His report to SRI included the following statement:

These animals were examined for the heritable cytogenetic abnormalities (reciprocal translocations). Three of these animals F<sub>1</sub> 103, 106, and 108 each had single reciprocal translocations. The other four animals F<sub>1</sub> 15, 40, 487, and 1455 were cytogenetically normal.

The original report by Dr. Lavappa and photographs are on file at Stanford Research Institute.

The main objective of this investigation was to study the methodology of performing mammalian translocation experiments and to evaluate such a procedure with a specific compound, sodium erythorbate. The original experimental plan involved a single breeding of F<sub>1</sub> males to virgin females. The results of this effort produced relatively large numbers of nonbreeder and partially sterile animals, as many as four to eight per group. Examination of the breeding data from these suspect animals showed many not to have had evidence of mating--no evidence of a vaginal plug in any of the three females caged with a specific male. Thus, it was decided to rebreed each of these suspect males to three additional virgin females. Although this extra task went beyond the requirements of this contract, it was our intent that this procedure be developed in a manner which would provide maximum information, still considering the realistic output of effort and cost.

We believe this rebreeding of initial presumptive mutant males is a significant contribution to reducing the possible interpretive error of presumptive mutant occurrence. For definitive confirmation of these biological results, cytogenetic examination of these animals should be done. Cytogenetic study of meiotic cells is tedious and time consuming. If confirmation of presumptive males had been done after the first breeding schedule was completed, some 43 animals would have had to have been examined. After the rebreeding regimen, only 26 animals still remained as presumptive mutants. These totals include the TEM groups as well as the reference control and sodium erythorbate groups. If the TEM animals are excluded, there would have been 20 presumptive mutants in the reference control and sodium erythorbate group after

the first breeding; when rebred; only 6 animals remained as presumptive mutants (3 controls, 1 in the 1,000 ppm, and 2 in the 5,000 ppm sodium erythorbate groups).

Careful review and evaluation of the data do not show sodium erythorbate (FDA No. 71-68) to be a mutagen in the mouse by the translocation test.

Table 1

SUMMARY OF HOST-MEDIATED ASSAYS WITH  
SALMONELLA TYPHIMURIUM TA1530

The values are the averages for  
at least 7 mice.

Regimen	Compound	Dose/kg	Avg CFU per ml (X 10 <sup>9</sup> )	Avg His <sup>+</sup> Revertants per ml	His <sup>+</sup> Revertants per 10 <sup>8</sup> CFU
Single Treatment	Negative Control		1.73	43.0	3.9
	DMNA	100 mg	1.96	829	49.5
	Sodium erythorbate	200 mg	0.56	36	7.9
		1 g	1.47	53	3.4
		5 g	1.38	53	4.9
Multiple Treatment (5 doses)	Negative Control		1.03	53	5.4
	Sodium erythorbate	200 mg	0.96	62	7.2
		1 g	1.12	67	5.8
		5 g	1.22	53	4.8

Table 2

**SUMMARY OF HOST-MEDIATED ASSAYS WITH  
SACCHAROMYCES CEREVISIAE D3**

The values are the averages for  
at least 7 mice.

Regimen	Compound	Dose/kg	Avg CFU per ml (X 10 <sup>7</sup> )	Avg Ade <sup>-</sup> Recombinants per ml	Ade <sup>-</sup> Recombinants per 10 <sup>5</sup> CFU
Single Treatment	Negative Control		1.67	0.8	5.2
	EMS (Positive Control)	350 mg	3.10	25.4	95
	Sodium erythorbate	200 mg	1.65	0.9	5.5
		1 g	1.68	1.2	6.6
		5 g	1.26	0.7	5.1
Multiple Treatment (5 doses)	Negative Control		4.09	3.0	8.8
	Sodium erythorbate	200 mg	5.32	2.0	3.7
		1 g	5.81	3.0	4.8
		5 g	4.81	3.0	5.1

Table 3  
HOST-MEDIATED ASSAY WITH SALMONELLA TYPHIMURIUM TA1530

The mice were given a single oral dose of sodium erythorbate. The positive control, DMNA, was given intramuscularly.

Compound	Dose/kg	Mouse Number	CFU/ml (X 10 <sup>3</sup> )	<u>His</u> <sup>+</sup> Revertants per ml	<u>His</u> <sup>+</sup> Revertants per 10 <sup>3</sup> CFU
Negative Control		1	1.02	18	1.8
		2	1.19	58	4.9
		3	1.13	38	3.4
		4	1.35	45	3.3
		5	1.68	72	4.3
		6	0.67	51	7.6
		7	0.70	58	8.3
		8	3.71	20	0.5
		9	4.09	27	0.7
		Avg	1.73	43	3.9
DMNA (Positive Control)	100 mg	1	2.63	824	31.3
		2	2.35	663	28.2
		3	4.11	1258	30.6
		4	1.08	921	85.3
		5	1.63	865	53.1
		6	1.21	1023	84.5
		7	0.73	247	33.8
		Avg	1.96	829	49.5
Sodium erythorbate	200 mg	1	0.38	43	14
		2	1.04	45	4.3
		3	0.66	47	7.1
		4	0.52	42	8.1
		5	0.33	31	9.4
		6	0.36	36	10
		7	0.23	17	7.4
		8	1.13	35	3.1
		9	0.40	31	7.8
		Avg	0.56	36	7.9
1 g	1 g	1	2.11	55	2.6
		2	1.65	63	3.8
		3	1.51	87	5.8
		4	1.57	49	3.1
		5	1.96	49	2.5
		6	1.01	53	5.3
		7	1.30	49	3.8
		8	0.86	48	5.6
		9	1.24	27	2.2
		Avg	1.47	53	3.9

Table 3 (continued)

HOST-MEDIATED ASSAY WITH SALMONELLA TYPHIMURIUM TA1530

The mice were given a single oral dose of sodium erythorbate. The positive control, DMNA, was given intramuscularly.

Compound	Dose/kg	Mouse Number	CFU/ml (X 10 <sup>9</sup> )	<u>His</u> <sup>+</sup> Revertants per ml	<u>His</u> <sup>+</sup> Revertants per 10 <sup>9</sup> CFU
Sodium erythorbate	5 g	1	1.30	48	3.7
		2	3.58	70	2.0
		3	0.95	35	3.7
		4	0.99	48	4.9
		5	0.80	36	4.5
		6	0.60	63	10.5
		7	1.46	68	4.7
Avg			1.38	53	4.9

Table 4  
HOST-MEDIATED ASSAY WITH SALMONELLA TYPHIMURIUM TA1530

The mice were given sodium erythorbate at the doses indicated for five consecutive days.

Compound	Dose/kg	Mouse Number	CFU/ml (X 10 <sup>3</sup> )	<u>His</u> <sup>+</sup> Revertants per ml	<u>His</u> <sup>+</sup> Revertants per 10 <sup>3</sup> CFU
Negative Control		1	2.15	95	4.4
		2	1.22	48	3.9
		3	0.85	53	6.2
		4	0.18	8	4.4
		5	0.60	55	9.2
		6	0.82	38	4.6
		7	1.19	73	6.1
		8	1.26	51	4.1
		Avg	1.03	53	5.4
Sodium erythorbate	200 mg	1	0.30	26	8.7
		2	1.01	53	5.3
		3	1.46	72	4.9
		4	1.35	86	6.4
		5	0.86	37	4.3
		6	0.59	83	14.1
		7	1.14	76	6.7
		Avg	0.96	62	7.2
1 g		1	1.31	63	4.8
		2	1.17	57	4.9
		3	0.71	44	6.2
		4	0.74	25	3.4
		5	1.07	94	8.8
		6	1.57	135	8.6
		7	1.28	54	4.2
		Avg	1.12	67	5.8
5 g		1	1.77	46	2.6
		2	1.63	51	3.1
		3	0.47	40	8.5
		4	1.36	53	3.9
		5	1.42	78	5.5
		6	0.79	28	3.5
		7	1.23	47	3.8
		8	1.08	80	7.4
		Avg	1.22	53	4.8

Table 5  
HOST-MEDIATED ASSAY WITH SACCHAROMYCES CEREVISIAE D3

The mice were given a single oral dose of sodium erythorbate. The positive control, EMS, was given intramuscularly.

Compound	Dose/kg	Mouse Number	CFU/ml (X 10 <sup>7</sup> )	<u>Ade</u> <sup>-</sup> Recombinants per ml(X 10 <sup>3</sup> )	<u>Ade</u> <sup>-</sup> Recombinants per 10 <sup>6</sup> CFU
Negative Control		1	1.42	0.5	3.5
		2	1.22	1.0	8.2
		3	0.75	1.0	13.3
		4	1.60	0	
		5	0.96	0	
		6	0.67	0	
		7	1.16	1.0	8.6
		8	4.22	0.5	1.2
		9	3.00	3.5	11.7
		Avg	1.67	0.8	5.2
EMS (Positive Control)	350 mg	1	4.55	23.5	52
		2	1.05	13.5	129
		3	0.06	0.5	83
		4	5.77	58.5	101
		5	4.13	24	58
		6	3.17	17	54
		7	3.33	18	54
		8	5.22	61.5	118
		9	0.60	12.5	208
		Avg	3.10	25.4	95
Sodium erythorbate	200 mg	1	0.29	0.5	17.2
		2	0.58	1.0	17.2
		3	0.24	0	
		4	1.11	0.5	4.5
		5	1.23	0.5	4.1
		6	2.23	1.5	6.7
		7	5.45	1.5	2.8
		8	2.08	1.5	7.2
		Avg	1.65	0.9	5.5
	1 g	1	0.27	0	
		2	1.18	1.0	8.5
		3	0.97	1.0	10.3
		4	1.95	2.0	10.3
		5	2.65	2.0	7.6
		6	4.35	2.5	5.8
		7	1.23	0.5	4.1
		8	0.86	0.5	5.8
		Avg	1.68	1.2	6.6

Table 5 (continued)

HOST-MEDIATED ASSAY WITH SACCHAROMYCES CEREVISIAE D3

The mice were given a single oral dose of sodium erythorbate. The positive control, EMS, was given intramuscularly.

Compound	Dose/kg	Mouse Number	CFU/ml (X 10 <sup>7</sup> )	<u>Ade<sup>-</sup></u> Recombinants per ml(X 10 <sup>3</sup> )	<u>Ade<sup>-</sup></u> Recombinants per 10 <sup>6</sup> CFU
Sodium erythorbate	5 g	1	1.33	0	
		2	1.43	0	
		3	0.85	1.5	17.6
		4	1.36	1.0	7.4
		5	0.21	0	
		6	2.37	1.0	4.2
		7	0.77	0	
		8	1.73	2.0	11.6
		Avg	1.26	0.7	5.1

Table 6  
HOST-MEDIATED ASSAY WITH SACCHAROMYCES CEREVISIAE D3

The mice were given sodium erythorbate at the doses indicated for five consecutive days.

Compound	Dose/kg	Mouse Number	CFU/ml (X 10 <sup>-7</sup> )	Ade <sup>-</sup> Recombinants per ml(X 10 <sup>3</sup> )	Ade <sup>-</sup> Recombinants per 10 <sup>6</sup> CFU
Negative Control		1	5.10	2	3.9
		2	2.10	3	14.3
		3	2.63	5	19
		4	5.45	5	9.2
		5	5.83	2	3.4
		6	1.35	1	7.4
		7	7.83	4	5.1
		8	2.46	2	8.1
		Avg	4.09	3	8.8
Sodium erythorbate	200 mg	1	3.28	1	3.0
		2	7.26	3	4.1
		3	4.02	4	4.0
		4	7.12	3	4.2
		5	4.70	1	2.1
		6	3.75	3	8.0
		7	4.83	1	2.1
		8	4.48	2	4.5
		9	8.48	1	1.2
		Avg	5.32	2	3.7
1 g		1	1.09	1	9.2
		2	6.73	2	3.0
		3	5.56	1	1.8
		4	8.70	2	2.3
		5	1.90	1	5.3
		6	6.25	6	9.6
		7	5.75	3	5.2
		8	7.78	1	1.3
		9	6.98	5	7.2
		10	7.35	2	2.7
		Avg	5.81	3	4.8
5 g		1	4.25	1	2.4
		2	1.04	1	9.6
		3	9.28	11	11.9
		4	4.68	1	2.1
		5	0.55	0	
		6	7.36	4	5.4
		7	6.52	3	4.6
		Avg	4.81	3	5.1

Table 7  
 IN VITRO ASSAYS OF SODIUM ERYTHORBATE WITH  
5 STRAINS OF SALMONELLA TYPHIMURIUM

Experiment Number	Compound	Amount added/plate	Metabolic Activation	<u>His<sup>+</sup></u> Revertants per Plate				
				TA1530	TA1535	TA1536	TA1537	TA1538
1	Negative Control		-	53	19	2	22	16
			+	60	31	3	7	11
2	2-Fluorenamine 5 µg		-					31
			+					1300
2	Sodium erythorbate 100 mg		-	43	29	2	8	18
			+	48	11	2	8	37
2	Negative Control		-		10			4
			+		22			7
2	N-Methy-N'-nitro-N-nitrosoguanidine (crystal added to center of plate)		-		*			*
			+		*			-
2	Ethyl methane sulfonate (10 µl added to 6 mm sterile filter disc)		-		+			-
			+		+			-
2	Dimethylnitrosamine (10 µl added to 6 mm sterile filter disc)		-		-			-
			+		+			-
2	Sodium erythorbate 100 mg		-		10			4
			+		14			8

\* indicates a ring of mutants around the spot where the chemical was added.

- indicates no ring of mutants.

Table 8

IN VITRO ASSAY OF SODIUM ERYTHORBATE WITH  
SACCHAROMYCES CEREVIAE D3

Compound	Percent Concentration (w/v or v/v)	CFU (x 10 <sup>7</sup> )	<u>Ade</u> Recombinants		Percent Survivors	<u>Ade</u> Recombinants per 10 <sup>5</sup> CFU
			per ml (x 10 <sup>3</sup> )	per ml		
Negative control		8.17	4.5		100%	5.1
EMS (positive control)	1%	4.80	119		59	248
Sodium erythorbate	5	7.67	4.0		93.8	5.2

## DOMINANT LETHAL STUDY - RAT

TABLE 9

## AVERAGE IMPLANTATIONS PER PREGNANT FEMALE

WEEK	CONTROL	71-68	.2 G/KG	71-68	1 G/KG	71-68	5 G/KG	TEM	SODIUM ERYTHORBATE	
									COMPOUND FDA NO	71-68
SINGLE TREATMENT										
1	218/ 19=11.47	177/ 19= 9.32		200/ 19=10.53		157/ 15=10.47			111/ 14= 7.93 **	
2	209/ 20=10.45	250/ 20=12.50 *I		229/ 19=12.05		247/ 20=12.35 *I			28/ 9= 3.11 **	
3	244/ 20=12.20	259/ 20=12.95		225/ 19=11.84		265/ 20=13.25			43/ 17= 2.53 **	
4	225/ 19=11.84	241/ 20=12.05		257/ 20=12.85		245/ 20=12.25			55/ 12= 4.58 **	
5	236/ 19=12.42	211/ 17=12.41		229/ 20=11.45		241/ 20=12.05			196/ 19=10.32 *	
6	228/ 20=11.40	231/ 20=11.55		231/ 20=11.55		207/ 18=11.50			246/ 20=12.30	
7	195/ 19=10.26	235/ 20=11.75		247/ 20=12.35 *I		252/ 20=12.60 *I			210/ 20=10.50	
8	200/ 17=11.76	250/ 20=12.50		228/ 19=12.00		247/ 20=12.35			215/ 19=11.32	
MULTIPLE TREATMENT										
1	252/ 20=12.60	248/ 19=13.05		219/ 18=12.17		232/ 18=12.89				
2	235/ 19=12.37	245/ 20=12.25		249/ 20=12.45		271/ 20=13.55 *I				
3	234/ 19=12.32	252/ 20=12.60		248/ 20=12.40		269/ 20=13.45 *I				
4	235/ 20=11.75	243/ 20=12.15		230/ 19=12.11		238/ 20=11.90				
5	234/ 19=12.32	242/ 20=12.10		259/ 20=12.95		236/ 20=11.80				
6	224/ 20=11.20	232/ 20=11.60		230/ 20=11.50		241/ 19=12.68				
7	264/ 20=13.20	225/ 19=11.84		245/ 20=12.25		241/ 20=12.05				

\* SIGNIFICANT AT P LT 0.05

\*\* SIGNIFICANT AT P LT 0.01

I INCREASED ABOVE CONTROL

## DOMINANT LETHAL STUDY - RAT

TABLE 10

## AVERAGE DEAD IMPLANTS PER PREGNANT FEMALE

WEEK	CONTROL	71-68		.2 G/KG		71-68		1 G/KG		71-68		5 G/KG		TEM		.2 MG/KG		
		FDA NO	SODIUM ERYTHORBATE	71-68	FDA NO	SODIUM ERYTHORBATE	71-68	FDA NO	SODIUM ERYTHORBATE	71-68	FDA NO	SODIUM ERYTHORBATE	71-68	FDA NO	SODIUM ERYTHORBATE	71-68	FDA NO	SODIUM ERYTHORBATE
SINGLE TREATMENT																		
1	38/ 19= 2.00			28/ 19= 1.47				37/ 19= 1.95				23/ 15= 1.53				85/ 14= 6.07 **		
2	10/ 20= .50			37/ 20= 1.85				20/ 19= 1.05				15/ 20= .75				28/ 9= 3.11 **		
3	29/ 20= 1.40			21/ 20= 1.05				17/ 19= .89				15/ 20= .75				32/ 17= 1.88		
4	30/ 19= 1.58			27/ 20= 1.35				21/ 20= 1.05				20/ 20= 1.00				26/ 12= 2.17		
5	16/ 19= .84			20/ 17= 1.18				21/ 20= 1.05				18/ 20= .90				163/ 19= 8.58 **		
6	26/ 20= 1.30			18/ 20= .90				13/ 20= .65				16/ 18= .89				49/ 20= 2.45		
63	7/ 19= 1.37			16/ 20= .80				16/ 20= .80				13/ 20= .65				17/ 20= .85		
	7/ 17= .41			22/ 20= 1.10 **				15/ 19= .79				19/ 20= .95				28/ 19= 1.47 *		
MULTIPLE TREATMENT																		
1	25/ 20= 1.25			33/ 19= 1.74				9/ 18= .50				12/ 18= .67						
2	23/ 19= 1.21			29/ 20= 1.45				27/ 20= 1.35				14/ 20= .70						
3	15/ 19= .79			21/ 20= 1.05				21/ 20= 1.05				13/ 20= .65						
4	34/ 20= 1.70			22/ 20= 1.10				19/ 19= 1.00				10/ 20= .50 **D						
5	19/ 19= 1.00			16/ 20= .80				18/ 20= .90				24/ 20= 1.20						
6	16/ 20= .80			24/ 20= 1.20				17/ 20= .85				19/ 19= 1.00						
7	11/ 20= .55			11/ 19= .58				14/ 20= .70				10/ 20= .50						

\* SIGNIFICANT AT P LT 0.05

\*\* SIGNIFICANT AT P LT 0.01

D DECREASED BELOW CONTROL

## DOMINANT LETHAL STUDY - RAT

TABLE 11

## DEAD IMPLANTS/TOTAL IMPLANTS

WEEK	CONTROL	71-68	.2 G/KG	71-68	1 G/KG	71-68	5 G/KG	TEM	SODIUM ERYTHORBATE
									FDA NO 71-68
SINGLE TREATMENT									
1	38/ 216= .17	28/ 177= .16		37/ 200= .18		23/ 157= .15			85/ 111= .77 **
2	10/ 209= .05	37/ 250= .15		20/ 229= .09		15/ 247= .06			28/ 28= 1.00 **
3	28/ 244= .11	21/ 259= .08		17/ 225= .08		15/ 265= .06			32/ 43= .74 **
4	30/ 225= .13	27/ 241= .11		21/ 257= .08		20/ 245= .08			26/ 55= .47 **
5	16/ 236= .07	20/ 211= .09		21/ 229= .09		18/ 241= .07			163/ 196= .83 **
6	26/ 226= .11	18/ 231= .08		13/ 231= .06		16/ 207= .08			49/ 246= .20
7	26/ 195= .13	16/ 235= .07		16/ 247= .06		13/ 252= .05			17/ 210= .08
8	7/ 200= .03	22/ 250= .09 **		15/ 228= .07		19/ 247= .08			28/ 215= .13 *
MULTIPLE TREATMENT									
1	25/ 252= .10	33/ 248= .13		9/ 219= .04		12/ 232= .05			
2	23/ 235= .10	29/ 245= .12		27/ 249= .11		14/ 271= .05			
3	15/ 234= .06	21/ 252= .08		21/ 248= .08		13/ 269= .05			
4	34/ 235= .14	22/ 243= .09		19/ 230= .08		10/ 238= .04 **D			
5	19/ 234= .08	16/ 242= .07		18/ 259= .07		24/ 236= .10			
6	16/ 224= .07	24/ 232= .10		17/ 230= .07		19/ 241= .08			
7	11/ 264= .04	11/ 225= .05		14/ 245= .06		10/ 241= .04			

\* SIGNIFICANT AT P LT 0.05

\*\* SIGNIFICANT AT P LT 0.01

D DECREASED BELOW CONTROL

## DOMINANT LETHAL STUDY - RAT

TABLE 13

## AVERAGE PREIMPLANTATION LOSS PER PREGNANT FEMALE

WEEK	CONTROL	71-68		71-68		71-68		71-68		SODIUM ERYTHORBATE	
		71-68	.2 G/KG	71-68	1 G/KG	71-68	.5 G/KG	TEM	.2 MG/KG	FDA NO	71-68
SINGLE TREATMENT											
1	29/ 19± 1.53	66/ 19± 3.47		39/ 19± 2.05		36/ 15± 2.40		61/ 14± 4.36 **			
2	63/ 20± 3.15	17/ 20± .85		25/ 19± 1.32		18/ 20± .90 *D		81/ 9± 9.00 **			
3	29/ 20± 1.45	21/ 20± 1.05		23/ 19± 1.21		20/ 20± 1.00		157/ 17± 9.24 **			
4	38/ 19± 2.00	31/ 20± 1.55		21/ 20± 1.05		34/ 20± 1.70		114/ 12± 9.50 **			
5	23/ 19± 1.21	27/ 17± 1.59		29/ 20± 1.45		26/ 20± 1.30		70/ 19± 3.68 *			
6	30/ 20± 1.50	26/ 20± 1.30		31/ 20± 1.55		18/ 18± 1.00		21/ 20± 1.05			
7	41/ 19± 2.16	30/ 20± 1.50		16/ 20± .80		16/ 20± .80 *D		52/ 20± 2.60			
8	23/ 17± 1.35	12/ 20± .60		15/ 19± .79		20/ 20± 1.00		43/ 19± 2.26			
MULTIPLE TREATMENT											
1	12/ 20± .60	22/ 19± 1.16		33/ 18± 1.83 *		18/ 18± 1.00					
2	14/ 19± .74	34/ 20± 1.70		30/ 20± 1.50		8/ 20± .40					
3	11/ 19± .58	36/ 20± 1.80		17/ 20± .85		23/ 20± 1.15					
4	31/ 20± 1.55	34/ 20± 1.70		25/ 19± 1.32		30/ 20± 1.50					
5	26/ 19± 1.37	31/ 20± 1.55		26/ 20± 1.30		16/ 20± .80					
6	30/ 20± 1.50	53/ 20± 2.65		33/ 20± 1.65		17/ 19± .89					
7	15/ 20± .75	26/ 19± 1.37		30/ 20± 1.50 *		26/ 20± 1.30					

\* SIGNIFICANT AT P LT 0.05

\*\* SIGNIFICANT AT P LT 0.01

D DECREASED BELOW CONTROL

## DOMINANT LETHAL STUDY OF COMPOUND 71-68      SODIUM ERYTHORBATE

TABLE 14  
CHI-SQUARE TEST OF THE FERTILITY INDEX (1 DEGREE OF FREEDOM)

WEEK	VEHICLE CONTROL				71-68 .2 G/KG				71-68 1 G/KG				71-68 5 G/KG				TEM .2 MG/KG			
	N PRG	N MTD	FERT. INDEX	CHISQ	N PRG	N MTD	FERT. INDEX	CHISQ	N PRG	N MTD	FERT. INDEX	CHISQ	N PRG	N MTD	FERT. INDEX	CHISQ	N PRG	N MTD	FERT. INDEX	CHISQ
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SINGLE TREATMENT																				
1	19	20	.95	0.00	19	20	.95	.53	19	20	.95	.53	15	20	.75	1.76	14	20	.70	2.77
2	20	20	1.00	0.00	20	20	1.00	0.00	19	20	.95	0.00	20	20	1.00	0.00	9	20	.45	12.54 **
3	20	20	1.00	0.00	20	20	1.00	0.00	19	20	.95	0.00	20	20	1.00	0.00	17	20	.85	1.44
4	19	20	.95	0.00	20	20	1.00	0.00	20	20	1.00	0.00	20	20	1.00	0.00	12	20	.60	5.16 *
5	19	20	.95	0.00	17	20	.85	.28	20	20	1.00	0.00	20	20	1.00	0.00	19	20	.95	.53
6	20	20	1.00	0.00	20	20	1.00	0.00	20	20	1.00	0.00	18	20	.90	.53	20	20	1.00	0.00
7	19	20	.95	0.00	20	20	1.00	0.00	20	20	1.00	0.00	20	20	1.00	0.00	20	20	1.00	0.00
8	17	20	.85	0.00	20	20	1.00	1.44	19	20	.95	.28	20	20	1.00	1.44	19	20	.95	.28
MULTIPLE TREATMENT																				
1	20	20	1.00	0.00	19	20	.95	0.00	18	20	.90	.53	18	20	.90	.53				
2	19	20	.95	0.00	20	20	1.00	0.00	20	20	1.00	0.00	20	20	1.00	0.00				
3	19	20	.95	0.00	20	20	1.00	0.00	20	20	1.00	0.00	20	20	1.00	0.00				
4	20	20	1.00	0.00	20	20	1.00	0.00	19	20	.95	0.00	20	20	1.00	0.00				
5	19	20	.95	0.00	20	20	1.00	0.00	20	20	1.00	0.00	20	20	1.00	0.00				
6	20	20	1.00	0.00	20	20	1.00	0.00	20	20	1.00	0.00	19	20	.95	0.00				
7	20	20	1.00	0.00	19	20	.95	0.00	20	20	1.00	0.00	20	20	1.00	0.00				

\* SIGNIFICANT AT PLT 0.05

\*\* SIGNIFICANT AT PLT 0.01

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

TABLE 15

## CHI-SQUARE TEST OF THE DEATH INDEX (1 DEGREE OF FREEDOM)

WEEK	VEHICLE CONTROL				71-68 .2 G/KG				71-68 1 G/KG				71-68 5 G/KG				TEM .2 MG/KG			
	N WDI	N PRG	DEATH INDEX	CHISQ	N WDI	N PRG	DEATH INDEX	CHISQ	N WDI	N PRG	DEATH INDEX	CHISQ	N WDI	N PRG	DEATH INDEX	CHISQ	N WDI	N PRG	DEATH INDEX	CHISQ
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
SINGLE TREATMENT																				
1	14	19	.74	0.00	15	19	.79	0.00	15	19	.79	0.00	7	15	.47	1.57	14	14	1.00	2.54
2	7	20	.35	0.00	14	20	.70	3.61	9	19	.47	.21	11	20	.55	.91	9	9	1.00	8.14 **
3	12	20	.60	0.00	12	20	.60	.10	9	19	.47	.22	7	20	.35	1.60	17	17	1.00	6.48 *
4	11	19	.58	0.00	10	20	.50	.03	11	20	.55	.02	12	20	.60	.04	10	12	.83	1.17
5	8	19	.42	0.00	11	17	.65	1.04	12	20	.60	.64	14	20	.70	2.05	19	19	1.00	12.79 **
6	12	20	.60	0.00	10	20	.50	.10	7	20	.35	1.60	9	18	.50	.09	14	20	.70	.11
7	10	19	.53	0.00	5	20	.25	2.08	10	20	.50	.02	6	20	.30	1.23	9	20	.45	.02
8	5	17	.29	0.00	17	20	.85	9.59 **	7	19	.37	.01	12	20	.60	2.34	11	19	.58	1.91
MULTIPLE TREATMENT																				
1	10	20	.50	0.00	12	19	.63	.26	8	18	.44	.00	6	18	.33	.50				
2	7	19	.37	0.00	12	20	.60	1.27	12	20	.60	1.27	8	20	.40	.02				
3	8	19	.42	0.00	11	20	.55	.24	11	20	.55	.24	12	20	.60	.64				
4	15	20	.75	0.00	12	20	.60	.46	12	19	.63	.21	7	20	.35	4.95 *D				
5	11	19	.58	0.00	10	20	.50	.03	12	20	.60	.04	10	20	.50	.03				
6	11	20	.55	0.00	13	20	.65	.10	12	20	.60	0.00	8	19	.42	.24				
7	9	20	.45	0.00	10	19	.53	.02	10	20	.50	0.00	7	20	.35	.10				

\* SIGNIFICANT AT PLT 0.05

\*\* SIGNIFICANT AT PLT 0.01

D DECREASED BELOW CONTROL

SODIUM ERYTHORBATE TRANSLOCATION STUDY--SUMMARY OF BREEDING AND LITTER DATA  
 $F_0$  GENERATION MICE

<u>Parameter</u>	<u>Control I</u>	<u>Control II</u>	<u>TEM<sup>a</sup> I (0.32 mg/l--4 wks)</u>	<u>TEM<sup>a</sup> II (0.32 mg/l--2 wks) (0.12 mg/l--2 wks)</u>	<u>71-68<sup>b</sup> (1000 ppm)</u>	<u>71-68<sup>b</sup> (5000 ppm)</u>
Number of $F_0$ males	40	40	40	60	39	37
Number of $F_0$ females	81	80	81	180	80	88
Number pregnant	71	69	11	150	70	68
Percent pregnant	88	86	14	83	88	87
Number of nonbreeder males	1	2	31	3	3	1
Percent nonbreeders	2.5	5.0	77.5	5.0	7.7	2.7
Average litter size	10.0	10.20	2.36	7.24	10.44	10.29
Average number males/litter	5.15	5.39	0.73	3.71	5.28	5.38
Average number females/litter	4.77	4.81	1.45	3.53	4.90	5.00

<sup>a</sup>Triethylenemelamine (TEM)

<sup>b</sup>Sodium Erythorbate (71-68)

Table 17

SODIUM ERYTHORBATE TRANSLOCATION STUDY--MOUSE LITTER SIZE DISTRIBUTION OF YOUNG DERIVED FROM F<sub>0</sub> GENERATION ADULTS

Litter Size	Control I	Control II	TEM <sup>a</sup> I (0.32 mg/l--4 wks)	TEM <sup>a</sup> II (0.32 mg/l--2 wks) (0.12 mg/l--2 wks)	71-68 <sup>b</sup> (1000 ppm)	71-68 <sup>b</sup> (5000 ppm)
1	0	0	2	2	0	0
2	0	0	1	3	0	1
3	0	0	0	3	1	0
4	0	3	1	9	0	0
5	1	2	1	10	0	1
6	4	0	1	16	1	2
7	5	0	1	29	3	2
8	6	3	0	19	5	3
9	8	8	0	23	11	11
10	15	21	0	16	13	13
11	13	15	0	6	14	9
12	9	12	0	6	12	18
13	3	3	0	1	6	4
14	4	2	0	1	4	2
15	2	0	0	0	0	1
16	0	0	0	0	0	0
17	0	0	0	0	0	0
18	0	0	0	0	0	0
Mean ( $\mu$ )	10.14	10.20	3.71	7.54	10.44	10.39
Variance ( $\sigma^2$ )	5.14	4.37	5.83	6.13	4.19	4.94
Standard deviation ( $\sigma$ )	2.27	2.09	2.41	2.48	2.05	2.22

<sup>a</sup>Triethylenemelamine (TEM)<sup>b</sup>Sodium erythorbate (71-68)

SODIUM ERYTHORBATE TRANSLOCATION STUDY--MOUSE SUMMARY BREEDING DATA OF F<sub>1</sub> GENERATION

<u>Parameter</u>	<u>Control I</u>	<u>Control II</u>	<u>TEM<sup>a</sup> I (0.32 mg/l--4 wks)</u>	<u>TEM<sup>a</sup> II (0.32 mg/l--2 wks)</u>	<u>71-68<sup>b</sup> (1000 ppm)</u>	<u>71-68<sup>b</sup> (5000 ppm)</u>
Number of F <sub>1</sub> males	97	100	8	112	100	100
Number of F <sub>1</sub> females	297	300	24	336	300	300
Number of mating plugs	244	267	16	281	276	262
Percent mating plugs	82	89	67	84	92	87
Number of pregnant females	256	242	13	268	277	263
Percent pregnant	86	81	54	80	92	88
Number pregnant with mating plugs	240	240	12	257	267	249
Percent pregnant with mating plugs	94	99	92	96	89	83
Number pregnant without mating plugs	16	2	1	11	10	14
Percent pregnant without mating plugs	6	1	8	4	3	5
Number of females not pregnant	41	58	11	68	23	37
Percent females not pregnant	14	19	46	20	8	12
Number not pregnant with mating plugs	4	27	4	24	9	13
Percent not pregnant with mating plugs	10	46	36	35	3	4
Nonbreeder and sterile males	5	0	2	3	1	3
Percent nonbreeder and sterile males	5	0	25	3	1	3

<sup>a</sup>Triethylenemelamine (TEM)<sup>b</sup>Sodium erythorbate (71-68)

T6

SODIUM ERYTHORBATE TRANSLOCATION STUDY--MOUSE LITTER SIZE DISTRIBUTION OF YOUNG DERIVED FROM F<sub>1</sub> GENERATION ADULTS

<u>Litter Size</u>	<u>Control I</u>	<u>Control II</u>	<u>TEM<sup>a,b</sup> I (0.32 mg/l--4 wks)</u>	<u>TEM<sup>a</sup> II (0.32 mg/l--2 wks)</u>	<u>71-68<sup>c</sup> (1000 ppm)</u>	<u>71-68<sup>c</sup> (5000 ppm)</u>
1	0	1	4	4	0	1
2	1	2	3	6	0	0
3	1	1	2	6	4	1
4	3	3	8	6	3	1
5	2	4	4	10	4	1
6	1	2	4	5	4	7
7	6	7	1	5	8	10
8	7	16	1	14	20	13
9	24	31	1	36	31	37
10	35	49	2	70	61	56
11	49	45	4	41	78	50
12	62	48	4	36	51	47
13	41	21	0	19	8	23
14	14	6	0	5	3	9
15	8	3	0	1	1	4
16	2	1	0	1	0	1
17	0	1	0	0	0	0
18	0	1	0	0	0	0
Mean ( $\mu$ )	11.18	10.42	6.0	9.58	10.16	10.49
Variance ( $\sigma^2$ )	4.71	5.64	13.30	8.10	3.89	4.40
Standard deviation ( $\sigma$ )	2.17	2.37	3.65	2.85	1.97	2.10

<sup>a</sup>Triethylenemelamine (TEM)

<sup>b</sup>Total of three matings--9 females per male--8 males.

<sup>c</sup>Sodium erythorbate (71-68)

Table 20  
SODIUM ERYTHORBATE TRANSLOCATION STUDY--SUMMARY OF DEAD IMPLANT OCCURRENCE PER F<sub>1</sub> MALE MOUSE

<u>Parameter</u>	<u>Control I</u>	<u>Control II</u>	<u>TEM<sup>a</sup> I (0.32 mg/l--4 wks)</u>	<u>TEM<sup>a</sup> II (0.32 mg/l--2 wks) (0.12 mg/l--2 wks)</u>	<u>71-68<sup>b</sup> (1000 ppm)</u>	<u>71-68<sup>b</sup> (5000 ppm)</u>
Number of F <sub>1</sub> males	99	100	8	112	100	100
♂'s having ♀s with no dead implants	35	40	1	36	36	36
♂'s having ♀s with 1 dead implant	29	32	1	41	33	30
♂'s having ♀s with 2 dead implants	18	17	0	10	16	20
♂'s having ♀s with 3 dead implants	7	5	0	6	8	9
♂'s having ♀s with 4 dead implants	2	6	0	4	3	2
♂'s having ♀s with 5 dead implants	2	0	0	0	1	0
♂'s having ♀s with more than 5 dead implants	1	0	4	12	2	0

<sup>a</sup>Triethylenemelamine (TEM)

<sup>b</sup>Sodium erythorbate (71-68)

## Tab

SODIUM ERYTHORBATE TRANSLOCATION STUDY--SUMMARY OF DEAD IMPLANTS PER PREGNANT FEMALE  
(FIRST BREEDING OF FEMALES TO F<sub>1</sub> MALES)

Parameter	Control I	Control II	TEM <sup>a</sup> I (0.32 mg/1--4 wks)	TEM <sup>a</sup> II (0.32 mg/1--2 wks) (0.12 mg/1--2 wks)	71-68 <sup>b</sup> (1000 ppm)	71-68 <sup>b</sup> (5000 ppm)
Number of pregnant females	256	242	13	268	277	263
♀s with no dead implants	175	160	3	160	187	186
♀s with 1 dead implant	61	62	1	64	73	56
♀s with 2 dead implants	14	17	0	14	12	15
♀s with 3 dead implants	4	3	0	7	2	5
♀s with 4 dead implants	1	0	3	5	1	1
♀s with 5 dead implants	1	0	0	1	0	0
♀s with more than 5 dead implants	0	0	6	17	2	0

Table 22

SODIUM ERYTHORBATE TRANSLOCATION STUDY--SUMMARY OF PRESUMPTIVE TRANSLOCATION F<sub>1</sub> MALES AFTER TWO BREEDINGS

Parameter	Control I	Control II	TEM <sup>a</sup> I (0.32 mg/1--4 wks)	TEM <sup>a</sup> II (0.32 mg/1--2 wks) (0.12 mg/1--2 wks)	71-68 <sup>b</sup> (1000 ppm)	71-68 <sup>b</sup> (5000 ppm)
Total number of F <sub>1</sub> males	99	100	8	112	100	100
Number of nonbreeder males	2	0	1	0	1	1
Number of presumptive sterile males	0	0	0	3	0	0
Number of partially sterile males	0	1	5	11	0	1

<sup>a</sup>Triethylenemelamine (TEM)

<sup>b</sup>Sodium erythorbate (71-68)

Table 23

SODIUM ERYTHORBATE TRANSLOCATION STUDY--INDIVIDUAL IDENTIFICATION OF NONBREEDER, PRESUMPTIVE STERILE, AND PARTIALLY STERILE F<sub>1</sub> MALES AFTER TWO BREEDINGS

<u>Control I</u>	<u>Control II</u>	<u>TEM<sup>a</sup> I (0.32 mg/1--4 wks)</u>	<u>TEM<sup>a</sup> II (0.32 mg/1--2 wks)</u>	<u>71-68<sup>b</sup> (1000 ppm)</u>	<u>71-68<sup>b</sup> (5000 ppm)</u>
<u>NON-BREEDER</u>					
15		102		578	488
40					
<u>PRESUMPTIVE STERILE</u>					
			1504		
			1546		
			1590		
<u>PARTIALLY STERILE</u>					
	1455	101	1515		487
		103	1528		
		106	1544		
		107	1561		
		108	1565		
			1571		
			1572		
			1595		
			1602		
			1605		
			1612		

<sup>a</sup>Triethylenemelamine (TEM)

<sup>b</sup>Sodium erythorbate (71-68)

Table 24

SODIUM ERYTHORBATE TRANSLOCATION STUDY--BREEDING AND REBREEDING SUMMARY  
OF NONBREEDER AND PRESUMPTIVE TRANSLOCATION F<sub>1</sub> MALES--CONTROLS

<u>Treatment Group</u>	<u>F<sub>1</sub> Male Number</u>	<u>First Breeding (3 females)</u>			<u>Second Breeding (3 females)</u>		
Control I	15	-*	-	-	-	-	-
	16	-	-	-	10	-	-
	40	-	-	-	-	-	-
	41	-	-	-	10	-	-
	69	-	-	-	11	12	11
	77	6	4	8	7	11	-
Totals		6			2		
Control II	1403	0**	9	0	9	-	-
	1423	0	0	9	10	11	11
	1455	0	7	7	-	-	-
	1484	0	9	9	-	-	8
	1491	0	9	-	10	12	10
	1495	2	5	0	12	10	2
Totals		6			1		

\* - indicates a plug was not detected and female was not pregnant.

\*\*0 indicates a plug was observed but female was not pregnant.

Table 25

SODIUM ERYTHORBATE TRANSLOCATION STUDY--BREEDING AND REBREEDING SUMMARY  
OF NONBREEDER AND PRESUMPTIVE TRANSLOCATION F<sub>1</sub> MALES--POSITIVE CONTROLS

<u>Treatment Group</u>	<u>F<sub>1</sub> Male Number</u>	<u>First Breeding (3 females)</u>			<u>Second Breeding (3 females)</u>			<u>Third Breeding (3 females)</u>		
TEM I (0.32 mg/l for 4 weeks)	101	0	**0	0	0	4	-*	4	1	6
	102	-	-	-	-	-	-	-	-	-
	103	-	1	-	5	5	0	4	4	2
	106	4	5	3	0	4	7	6	5	6
	107	0	-	-	1	-	-	-	-	-
	108	<u>2</u>	<u>8</u>	<u>6</u>	<u>4</u>	<u>4</u>	<u>1</u>	<u>0</u>	<u>2</u>	-
<b>Totals</b>		<b>6</b>			<b>6</b>			<b>6</b>		
TEM II (0.32 mg/l for 2 weeks, 0.12 mg/l or 2 weeks)	1504	0	0	-	0	0	0			
	1515	3	3	4	5	4	2			
	1528	0	2	0	0	1	-			
	1544	4	2	1	3	0	5			
	1546	0	0	0	0	0	-			
	1551	0	-	-	0	12	10			
	1561	4	3	-	4	3	3			
	1565	0	4	2	4	2	1			
	1571	1	6	8	3	3	4			
	1572	5	2	6	-	-	-			
	1576	9	5	6	8	8	-			
	1590	0	0	0	0	0	0			
	1595	5	2	3	2	3	-			
	1599	9	4	-	12	12	-			
	1602	3	0	6	2	0	7			
	1605	5	0	2	-	-	-			
	1612	<u>5</u>	<u>3</u>	-	<u>0</u>	<u>3</u>	<u>4</u>			
<b>Totals</b>		<b>17</b>			<b>14</b>					

\* - indicates a plug was not detected and female was not pregnant.

\*\*0 indicates a plug was observed but female was not pregnant.

Table 26

SODIUM ERYTHORBATE TRANSLOCATION STUDY--BREEDING AND REBREEDING SUMMARY  
OF NONBREEDER AND PRESUMPTIVE TRANSLOCATION F<sub>1</sub> MALES--SODIUM ERYTHORBATE

<u>Treatment Group</u>	<u>F<sub>1</sub> Male Number</u>	<u>First Breeding (3 Females)</u>			<u>Second Breeding (3 Females)</u>		
Sodium Erythorbate (1000 ppm)	578	-*	-	-	-	-	-
	580	0**	4	9	12	7	11
Totals			2			1	
Sodium Erythorbate (5000 ppm)	449	0	-	-	12	8	-
	454	-	-	-	8	-	-
	459	9	9	0	12	10	10
	465	9	7	6	11	12	11
	487	9	9	6	0	0	8
	488	-	-	-	-	-	-
Totals			6			2	

\* - indicates a plug was not detected and female was not pregnant.

\*\* 0 indicates a plug was observed but female was not pregnant.

Table 27

SODIUM ERYTHORBATE TRANSLOCATION STUDY--CYTOGENETIC EVALUATION  
OF MEIOTIC CELLS FROM TESTES PREPARATIONS OF F<sub>1</sub> MICE

<u>Treatment</u>	<u>F<sub>1</sub> Male Number</u>	<u>Testes Weight (mg)</u>	<u>Classification After Two Breedings</u>	<u>Cytogenetic Classification</u>
<b>Control I</b>	15	272	Nonbreeder	Normal
	40	272	Nonbreeder	Normal
<b>Control II</b>	1455	301	Partially sterile	Normal
<b>TEM I</b>	103	375	Partially sterile	Positive reciprocal translocation
	106	259	Partially sterile	Positive reciprocal translocation
	108	252	Partially sterile	Positive reciprocal translocation
<b>Sodium Erythorbate (5000 ppm)</b>	487	193	Partially sterile	Normal

**APPENDIX A**

**STATISTICAL PROCEDURE FOR EVALUATION OF  
DOMINANT LETHAL DATA WITH A DESCRIPTION  
AND EXPLANATION OF THE COMPUTER PRINTOUTS**

Program Abstract

1. Serial Number: KSH009

2. Title: Chemical Mutagenicity Study

3. Deck Name: KLUTE

4. Abstract: This program performs statistical calculations to determine the mutagenicity of certain chemical compounds.

5. Originator: Jim Eusebio  
June 1972

6. Revised: Kathleen S. Himmelberger

7. Date: February 8, 1974

8. Memory Requirements: 134236<sub>8</sub>

9. Input: Data deck

10. Output: Printed output listing input data and results of several statistical tests (CHI-SQUARE test, ARMITAGE test, T-test, regression fits, PROBIT analysis, analysis of variance).

11. System: CDC 6400 Scope 3.3  
FORTRAN IV

### Program Description

The program which performs statistical calculations using the autopsy data of female rats is called KLUTE. KLUTE is written in FORTRAN IV for use on the CDC 6400. Because storage requirements of the program exceeded available memory, it was necessary to use overlays (see SCOPE Reference Manual, 6000 Version 3.3, pp 6-14 to 6-18). Therefore, card decks must be loaded in a specific order.

Although KLUTE was designed to allow as much flexibility in experimentation as possible, there are some criteria which must be satisfied:

1. The maximum number of test groups is included in the first week. After the first week, groups may be terminated. (Some studies mate the single-dose groups for eight weeks and multiple-dose groups for only seven.)
2. There are at most five single-dose groups and five multiple-dose groups. The program will handle experiments using only single-dose groups or multiple-dose groups.
3. A control group exists for single-dose and/or multiple-dose groups.
4. All males in the control group are mated in the first week. If a male should die during or after the first week, no data cards appear for him from that time on; however, there must be at least one data card for him in week one. Control group males are numbered consecutively beginning with 1.
5. Number of each variable should not exceed the following:

<u>Variable</u>	<u>Maximum</u>
Males	20/group
Females	100/week
Weeks in study	8
Females mated to each male	80/8 week period

STATISTICAL PROCEDURE  
FOR EVALUATION OF DOMINANT LETHAL DATA

Introduction

In order to determine the mutagenic potential of selected food additives and chemicals, Stanford Research Institute has conducted several dominant lethal tests in mice and rats. Although individual tests differed slightly in details, basic test procedures were to administer compounds orally at different dose levels and frequency to groups of males. These males, as well as control group males for both the single and multiple-dose groups, were mated with two virgin females.

In studies using mice, females were examined daily for the presence of a mating plug (readily detectable in the mouse). When a plug was found, the female was replaced with a new virgin female. Fourteen days after identifying the mating plug, the females were sacrificed, and total implants, early deaths, and late deaths were counted. This continuous breeding and examination procedure was continued for seven weeks.

In studies using rats, females were removed after seven days of cohabitation with the males and replaced with new virgin females. Fourteen to eighteen days after first day of breeding, females were sacrificed and total implants, early deaths, late deaths, and total corpora lutea were counted. This procedure was repeated for eight weeks in the single dose groups and seven weeks in the multiple dose groups.

Autopsy data for each female was coded on work sheets and then punched on computer cards. Those data cards, as well as a few cards describing the particulars of the project (duration, number of test groups, number of mated females, etc.), comprise the input to the KLUTE program.

### Input

Input to the KLUTE program is a card deck, which was briefly described in the introduction.

### Output

Output from KLUTE includes a printed list of the input data and results of several statistical tests.

KLUTE performs the following operations (where each statistical calculation is done once for each week's data):

1. The data cards are read and stored in central memory while a check is made to verify that the number of corpora lutea is greater than or equal to the number of implants. If any data fail this check, the run is aborted and the data are returned for review. The entire set of input data is printed out.
2. The fertility index (the number of pregnant females divided by the number of mated females) is calculated.
3. The chi-square test is done to compare each dosage level to the control on fertility. Let:

$N_i$  = no. of mated females at dose level  $i$ ,

$n_i$  = no. of pregnant females at dose level  $i$ .

Then the chi-square  $2 \times 2$  tables are of the form:

$$\begin{bmatrix} n_0 & n_i \\ N_0 - n_0 & N_i - n_i \end{bmatrix}$$

and chi-squared (with 1 degree of freedom) is:

$$x_i^2 = \frac{(N_0 + N_i)(|n_0(N_i - n_i) - n_i(N_0 - n_0)| - (N_0 + N_i)/2)^2}{(n_0 + n_i)(N_0 - n_0 + N_i - n_i)(N_0)(N_i)} \quad (\text{corrected for continuity})$$

where the subscript 0 represents the control group.\*

For each dosage group (including the control group and TEM), the following is printed out: the number of pregnant females ( $N_{PRG}$ ), the number of mated females ( $N_{MTD}$ ), the fertility index and  $x^2$ .

4. Armitage's test for a linear trend in proportions is applied to the fertility index. The formula for this calculation is found on pages 246-248 of "Statistical Calculations" by Snedecor and Cochran, 6th Edition, Iowa State University Press, 1967. Using the notation of (3) above, we have a  $2 \times 3$  contingency table of the form:

	<u>dose 1</u>	<u>dose 2</u>	<u>dose 3</u>	<u>row totals</u>
<u>Column Totals</u>	$n_1$	$n_2$	$n_3$	$t$
	$N_1 - n_1$	$N_2 - n_2$	$N_3 - n_3$	$T-t$
	$N_1$	$N_2$	$N_3$	$T$

Armitage's "chi-square" is given as  $x_{(C-1)}^2 - x_1^2$ , where  $C=3$  and

$$x_1^2 = \frac{T(T\sum nx - t\sum Nx)^2}{t(T-t)(T\sum Nx^2 - (\sum Nx)^2)}, \quad x_{(C-1)}^2 = \frac{T^2(\sum \frac{n^2}{N} - \frac{t^2}{T})}{t(T-t)},$$

\*In all tests, the single-dose treatment groups are compared with the single-dose control group and the multiple-dose treatment groups compared with the multiple-dose control group.

where  $\Sigma n_i x$  stands for  $\sum_{i=1}^3 n_i x_i$ ,  $\sum \frac{n_i^2}{N}$  for  $\sum_{i=1}^3 \frac{n_i^2}{N_1}$ , etc., and the  $x_i$  are the dosage levels.

This calculation is then repeated with  $x$  replaced by  $\log x$ . The Armitage test is also applied to the following  $2 \times 4$  contingency table:

<u>Control</u>	<u>dose 1</u>	<u>dose 2</u>	<u>dose 3</u>
$n_0$	$n_1$	$n_2$	$n_3$
$N_0 - n_0$	$N_1 - n_1$	$N_2 - n_2$	$N_3 - n_3$

In this case,  $C=4$ .

The printout for the Armitage tests includes the degrees of freedom, the number pregnant (N PRG) and the number mated (N MTD) for each of the 3 or 4 groups included in the tests, plus  $\chi^2_{(C-1)}$ ,  $\chi^2_1$  and their difference (labeled ARMTG CHISQ).

5. The t-test is applied to determine significant differences between the average number of implantations per pregnant female at a dose level, and the average for the control. Let

$n_i$  = no. of pregnant females at dose level  $i$ .

$u_{ij}$  = total no. of implantations for pregnant female  $j$  of dose  $i$ .

Then,

$$\bar{u}_i = \frac{1}{n_i} \sum_{j=1}^{n_i} u_{ij}$$

$$s_i^2 = \sum_{j=1}^{n_i} (u_{ij} - \bar{u}_i)^2$$

The T-statistic for dose  $i$  has  $n_o + n_i - 2$  degrees of freedom, and is equal to:

$$t_i = \frac{\bar{u}_o - \bar{u}_i}{\sqrt{\frac{s_o^2 + s_i^2}{n_o + n_i - 2} \left( \frac{1}{n_o} + \frac{1}{n_i} \right)}}$$

The t-test printout gives, for each group: the number pregnant (N PRG), the mean and standard deviation of the number of implantations. The absolute value of T and the degrees of freedom (DF) are given for each treatment group and for TEM.

6. A regression fit of the average number of implantations,  $\bar{u}_i$ , is made for both the arithmetic and logarithmic dose ( $X_i$  and  $\log X_i$ ) to see which is better.

These two fits include the data from the three treatment groups only. A third regression using the  $X_i$  as independent variables includes data from the three treatment groups and the control group.

The regressions are computed as follows:

Let  $N$  = the number of observations, i.e., the total number of pregnant females in the groups used in the regression.

$X_i$  = the value of the independent variable (dose or log dose) for the  $i$ -th female.

$U_i$  = the value of the dependent variable (number of implantations) for the  $i$ -th female.

Then,

$$\bar{X} = \bar{x} = \frac{1}{N} \sum_{i=1}^N x_i$$

SD X = standard deviation of the  $x_i$

$$= \left[ \frac{1}{N-1} SS_x \right]^{1/2},$$

$$\text{where } SS_x = \sum_{i=1}^N (x_i - \bar{x})^2$$

$$\bar{U} = \bar{u} = \frac{1}{N} \sum_{i=1}^N u_i,$$

SD U = standard deviation of the  $u_i$

$$= \left[ \frac{1}{N-1} SS_u \right]^{1/2},$$

$$\text{where } SS_u = \sum_{i=1}^N (u_i - \bar{u})^2,$$

$$\text{and } S_{XU} = \sum_{i=1}^N (x_i - \bar{x})(u_i - \bar{u}).$$

From these quantities, we compute:

B = estimate of the slope of the regression line

$$= S_{XU}/SS_x,$$

A = estimate of the intercept of the regression line

$$= \bar{u} - B\bar{x},$$

Also,

$$\begin{aligned} \text{VARU.X} &= \text{variance of } U \text{ about the regression line} \\ &= \frac{\text{SS}_U - (S_{XU})^2 / \text{SS}_X}{N-2} \end{aligned}$$

and from this is computed,

$\text{VARB} = \text{variance of the estimate, B}$

$$= \frac{\text{VARU.X}}{\text{SS}_X}$$

$\text{VARA} = \text{variance of the estimate, A}$

$$= \text{VARU.X} \left[ \frac{1}{N} + \frac{\bar{X}^2}{\text{SS}_X} \right]$$

$\text{VARUBAR} = \text{variance of } \bar{U}$ ,

$$= \frac{\text{VARU.X}}{N}$$

and

$\text{CV } U.X = \text{coefficient of variation of } U \text{ about } X$

$$= \frac{(\text{VARU.X})^{1/2}}{\bar{U}}$$

And finally we have:

$\text{TB} = \text{the t-statistic for testing the hypothesis that the regression slope is zero}$

$$= \frac{B}{\sqrt{\text{VARB}}}$$

$\text{DF} = \text{number of degrees of freedom for TB}$

$$= N - 2$$

7. The preimplantation loss,  $y_{ij}$ , is calculated for each pregnant female,  $j$ , as the number of corpora lutea,  $v_{ij}$ , minus the number of implantations,  $u_{ij}$ . Then the Freeman-Tukey transformation is applied to  $y_{ij}$  as follows:

$$f_{ij} = \sin^{-1} \sqrt{\frac{y_{ij}}{v_{ij}+1}} + \sin^{-1} \sqrt{\frac{y_{ij}+1}{v_{ij}+1}}$$

The t-test is then applied to the  $f$ 's. Let

$$\bar{f}_i = \frac{1}{n_i} \sum_{j=1}^{n_i} f_{ij}$$

$$s_i^2 = \sum_{j=1}^{n_i} (f_{ij} - \bar{f}_i)^2,$$

where  $n_i$ , and  $n_o$  are defined above (step 3).

Then  $t_i = \frac{\bar{f}_o - \bar{f}_i}{\sqrt{\left[ \frac{s_o^2 + s_i^2}{n_o + n_i - 2} \left( \frac{1}{n_o} + \frac{1}{n_i} \right) \right]^{1/2}}}$

The printout gives, for each group, the number of pregnant females (N PRG), the mean and standard deviation of the  $f_{ij}$ 's. For each treatment group and for TEM, the absolute value of  $t_i$  (T), and its degrees of freedom (DF) are given.

8. The number of dead implants,  $z_{ij}$ , for each female,  $j$ , is the sum of the early and late deaths. The t-test is applied to determine significant differences between the average number of dead implants per pregnant female at a dose level and the average for the control by repeating step 5 above with  $z_{ij}$  substituted for  $u_{ij}$ .

9. The number of pregnant females with one or more dead implants,  $m_i$ , is calculated. In the printout, the  $m_i$  are referred to as N WDI (i.e., "number with dead implants").

10. The chi-square test and Armitage's test for a linear trend is calculated for the proportion of pregnant females with one or more dead implants,

$$p_i = \frac{m_i}{n_i}$$

by repeating steps 3 and 4, above, with  $m_i$  substituted for  $n_i$ , and  $n_i$  substituted for  $N_i$ .

In the printout, the ratio,  $p_i$ , is called the "death index", in analogy with the fertility index.

11. The ratios,  $p_i$ , computed above, undergo a probit analysis to determine whether the probit of this proportion is linearly related to the log dose. Computer subroutine PROBT, from the IBM System/360 Scientific Subroutine Package Version III, is used to compute A and B and the  $\chi^2$  statistic for the regression equation,

$$P_i = A + B * \log x_i$$

where  $P_i$  is derived by the program from

$$N_x(0,1)dx = p_i$$

$(N_x(0,1)$  is the normal curve, with a mean of 0 and a standard deviation of 1).

12. The number of dead implants,  $z_{ij}$ , and the number of total implants,  $u_{ij}$ , are calculated for each pregnant female, j. The Freeman-Tukey transformation and subsequent t-test is applied to this data by repeating step 7, above, as follows:

$$f_{ij} = \sin^{-1} \sqrt{\frac{z_{ij}}{u_{ij}+1}} + \sin^{-1} \sqrt{\frac{z_{ij}+1}{u_{ij}+1}}$$

$$\bar{f}_i = \frac{1}{n_i} \sum_{j=1}^{n_i} f_{ij}$$

$$s_i^2 = \sum_{j=1}^{n_i} (f_{ij} - \bar{f}_i)^2$$

$$t_i = \frac{\bar{f}_o - \bar{f}_i}{\sqrt{\frac{s_o^2 + s_i^2}{n_o + n_i - 2} \left( \frac{1}{n_o} + \frac{1}{n_i} \right)}}^{1/2}$$

13. Five one-way analyses of variance are performed on the control groups' data. The five variables analyzed are:

- a. Number of pregnant females,
- b. Number of implantations per pregnant female,
- c. The pre-implantation loss (as defined in Step 7) per pregnant female,
- d. The number of dead implants per pregnant female,
- e. The ratio of dead implants to the total implants per pregnant female.

In view of the fact that none of the variables on which the one-way analysis of variance have been performed is even approximately normal in distribution, the probability levels associated with these analyses of variances are necessarily approximate.

For case a.,  $R_{kj}$  equals 1 if female j assigned to male k became pregnant; otherwise  $R_{kj}$  equals zero. For cases b. through e. the tabulation is limited to data for pregnant females; i.e.,  $R_{kj}$  equals the value of the specified variable for female j assigned to male k if the female was pregnant; data for non-pregnant females are excluded.

For case a.,  $L_k$  equals the number of females assigned to male k. Cases b. through e.,  $L_k$  equals the number of females assigned to male k that became pregnant.

For each of these variables the ANOVA calculations are as follows:

M is the number of males

$$\bar{R}_k = \frac{1}{L_k} \sum_{j=1}^{L_k} R_{kj}$$

$$\bar{R} = \frac{1}{M} \sum_{k=1}^M \bar{R}_k$$

Then, the sum-of-squares-within-males =  $SUMSQ_w$

$$= \sum_{k=1}^M = \sum_{j=1}^{L_k} (R_{kj} - \bar{R}_k)^2,$$

the degrees-of-freedom-within-males =  $DF_w$

$$= \sum_{k=1}^M (L_k - 1),$$

the mean-square-within-males =  $MEANSQ_w = \frac{SUMSQ_w}{DF_w}$ .

Similarly, the sum-of-squares-between-males =  $SUMSQ_B = \sum_{k=1}^M L_k (\bar{R}_k - \bar{R})^2$ ,

the degrees-of-freedom-between-males =  $DF_B = M-1$ ,

and the mean-square-between-males =  $MEANSQ_B = \frac{SUMSQ_B}{DF_B}$ .

Finally, the F-ratio is  $F = \frac{MEANSQ_B}{MEANSQ_w}$ .

In the printout, these quantities are labeled without the subscripts, but the "within" and "between" quantities are identified by the page heading.

Also, the total-sum-of-squares =  $SUMSQ_w + SUMSQ_B$

and its degrees-of-freedom

$$= \sum_{k=1}^M L_k - 1,$$

printed.

14. The t-test is applied to determine significant differences between the average number of corpora lutea per pregnant female at a dose level, and the average for the control. Let

$n_i$  = no. of pregnant females at dose level i.

$c_{ij}$  = total no. of corpora lutea for pregnant female j of dose i.

Then,

$$\bar{c}_i = \frac{1}{n_i} \sum_{j=1}^{n_i} c_{ij}$$

$$s_i^2 = \frac{1}{n_i} \sum_{j=1}^{n_i} (c_{ij} - \bar{c}_i)^2$$

The T-statistic for dose i has  $n_o + n_i - 2$  degrees of freedom, and is equal to:

$$t_i = \frac{\bar{c}_o - \bar{c}_i}{\sqrt{\left[ \frac{s_o^2 + s_i^2}{n_o + n_i - 2} \left( \frac{1}{n_o} + \frac{1}{n_i} \right) \right]^{1/2}}}$$

The t-test printout gives, for each group: the number pregnant (N PRG), the mean and standard deviation of the number of corpora lutea. The absolute value of T and the degrees of freedom (DF) are given for each treatment group and for TEM.

**APPENDIX B**

**RAW DATA AND STATISTICAL ANALYSES**

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## DOMINANT LETHAL STUDY OF COMPOUND 71-68

DIUM ERYTHORBATE

PAGE 1

TEST MATERIAL	WEEK	S/M DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
						L	R	L	R	L	R	L	R
CONTROL	1	S 0.00000	1	1	Y	6	6	0	0	0	2	6	6
CONTROL	1	S 0.00000	1	2	YY	3	5	0	1	0	0	5	8
CONTROL	1	S 0.00000	2	3	Y	11	4	0	0	3	2	11	5
CONTROL	1	S 0.00000	2	4	YY	5	4	0	0	1	0	5	4
CONTROL	1	S 0.00000	3	5	YY	5	6	0	1	0	0	6	7
CONTROL	1	S 0.00000	3	6	YY	6	4	0	0	1	0	6	4
CONTROL	1	S 0.00000	4	7	YY	4	8	0	0	1	2	6	8
CONTROL	1	S 0.00000	4	8	YY	7	4	1	0	0	0	7	4
CONTROL	1	S 0.00000	5	9	YY	1	7	0	0	0	1	3	7
CONTROL	1	S 0.00000	5	10	YY	5	9	0	0	0	0	5	9
CONTROL	1	S 0.00000	6	11	YY	5	5	1	0	0	0	6	6
CONTROL	1	S 0.00000	6	12	YY	3	7	0	0	0	0	4	9
CONTROL	1	S 0.00000	7	13	YY	6	6	0	0	0	0	6	6
CONTROL	1	S 0.00000	7	14	YY	4	7	0	0	0	0	5	8
CONTROL	1	S 0.00000	8	15	YY	7	4	3	1	0	1	7	5
CONTROL	1	S 0.00000	8	16	YY	5	6	0	0	0	1	8	6
CONTROL	1	S 0.00000	9	17	YY	7	7	0	0	1	0	9	9
CONTROL	1	S 0.00000	9	18	YY	5	8	0	0	0	0	7	8
CONTROL	1	S 0.00000	10	19	YY	6	10	4	9	1	0	6	10
CONTROL	1	S 0.00000	10	20	N	0	0	0	0	0	0	0	0
71-68	1	S .20000	21	41	YY	9	5	1	1	1	1	9	5
71-68	1	S .20000	21	42	YY	5	8	0	0	1	1	5	8
71-68	1	S .20000	22	43	YY	0	2	0	0	0	1	8	3
71-68	1	S .20000	22	44	YY	8	3	0	0	0	0	8	4
71-68	1	S .20000	23	45	YN	0	0	0	0	0	0	0	0
71-68	1	S .20000	23	46	YY	4	1	2	0	0	0	7	7
71-68	1	S .20000	24	47	YY	5	8	1	0	0	0	6	8
71-68	1	S .20000	24	48	YY	4	8	0	0	0	1	4	8
71-68	1	S .20000	25	49	YY	4	8	0	0	0	0	4	9
71-68	1	S .20000	25	50	YY	10	6	1	0	1	1	10	6
71-68	1	S .20000	26	51	YY	7	6	1	0	0	1	10	6
71-68	1	S .20000	26	52	YY	1	3	1	1	0	0	1	3
71-68	1	S .20000	27	53	YY	7	6	2	0	0	0	7	7
71-68	1	S .20000	27	54	YY	2	2	2	2	0	0	8	4
71-68	1	S .20000	28	55	YY	3	10	1	0	0	0	12	5
71-68	1	S .20000	28	56	YY	6	6	0	0	0	0	4	10
71-68	1	S .20000	29	57	YY	6	4	0	1	0	0	6	6
71-68	1	S .20000	29	58	YY	0	5	0	0	0	0	8	4
71-68	1	S .20000	30	59	YY	1	2	0	0	0	0	5	5
71-68	1	S .20000	30	60	Y					0	1	10	3

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

PAGE 2

TEST MATERIAL	WEEK	S/M DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS	EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R
71-68	1	S 1.00000	31	61	Y	5	2	0	0	1	1	9 2
71-68	1	S 1.00000	31	62	Y	1	5	0	0	0	0	7 6
71-68	1	S 1.00000	32	63	Y	5	7	5	7	0	0	6 7
71-68	1	S 1.00000	32	64	Y	4	6	0	1	0	0	4 7
71-68	1	S 1.00000	33	65	Y	6	4	0	0	0	1	6 7
71-68	1	S 1.00000	33	66	Y	6	4	0	0	2	0	6 7
71-68	1	S 1.00000	34	67	Y	4	7	0	1	0	1	4 7
71-68	1	S 1.00000	34	68	Y	6	5	0	1	0	1	5 8
71-68	1	S 1.00000	35	69	Y	5	7	0	0	2	0	4 10
71-68	1	S 1.00000	35	70	Y	3	10	0	2	0	0	7 6
71-68	1	S 1.00000	36	71	Y	5	6	0	0	0	0	7 4
71-68	1	S 1.00000	36	72	Y	4	4	1	0	0	0	10 8
71-68	1	S 1.00000	37	73	Y	9	6	0	0	0	0	7 6
71-68	1	S 1.00000	37	74	Y	7	6	0	0	1	0	7 5
71-68	1	S 1.00000	38	75	Y	7	5	0	2	0	0	4 6
71-68	1	S 1.00000	38	76	Y	0	5	0	5	0	0	10 3
71-68	1	S 1.00000	39	77	N	10	2	0	0	2	0	0 0
71-68	1	S 1.00000	39	78	Y	0	0	0	0	0	0	5 6
71-68	1	S 1.00000	40	79	Y	5	5	0	0	0	0	4 8
71-68	1	S 1.00000	40	80	Y	4	8	0	0	0	1	7 8
71-68	1	S 5.00000	41	81	Y	3	6	1	2	0	0	3 8
71-68	1	S 5.00000	41	82	Y	5	5	1	3	1	0	6 7
71-68	1	S 5.00000	42	83	Y	3	8	0	0	0	0	3 8
71-68	1	S 5.00000	42	84	Y	2	9	0	1	0	0	2 10
71-68	1	S 5.00000	43	85	N	0	0	0	0	0	0	0 0
71-68	1	S 5.00000	43	86	Y	6	5	0	0	0	0	7 6
71-68	1	S 5.00000	44	87	N	0	0	0	0	0	0	0 0
71-68	1	S 5.00000	44	88	Y	4	5	0	0	0	0	5 8
71-68	1	S 5.00000	45	89	Y	7	5	0	0	0	0	0 0
71-68	1	S 5.00000	45	90	N	0	0	0	0	0	0	5 8
71-68	1	S 5.00000	46	91	Y	0	3	0	0	0	0	10 5
71-68	1	S 5.00000	46	92	Y	8	5	0	0	0	0	6 5
71-68	1	S 5.00000	47	93	Y	5	5	0	0	0	0	6 7
71-68	1	S 5.00000	47	94	Y	6	7	0	0	0	1	7 6
71-68	1	S 5.00000	48	95	Y	5	5	0	0	0	0	0 0
71-68	1	S 5.00000	48	96	N	0	0	0	0	0	0	4 9
71-68	1	S 5.00000	49	97	Y	4	7	0	0	0	0	0 0
71-68	1	S 5.00000	49	98	N	0	0	0	0	1	0	5 11
71-68	1	S 5.00000	50	99	Y	5	9	0	0	0	1	3 8
71-68	1	S 5.00000	50	100	Y	3	7	1	3	1	3	3 3

**DOMINANT LETHAL STUDY OF COMPOUND 71-68**

## SODIUM ERYTHORBATE

PAGE 3

TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS	EARLY DEATHS		LATE DEATHS		CORPORAL LUTEA	
								L	R	L	R	L	R
TEM	1	S	.00020	11	21	Y	6	3	5	2	0	0	6
TEM	1	S	.00020	11	22	Y	3	4	2	4	0	0	4
TEM	1	S	.00020	12	23	Y	7	8	4	6	0	0	7
TEM	1	S	.00020	12	24	N	0	0	0	0	0	0	0
TEM	1	S	.00020	13	25	N	0	0	0	0	0	0	0
TEM	1	S	.00020	13	26	Y	2	6	2	4	0	0	6
TEM	1	S	.00020	14	27	Y	0	0	0	0	0	0	0
TEM	1	S	.00020	14	28	Y	3	8	0	4	0	0	3
TEM	1	S	.00020	15	29	Y	0	0	0	0	0	0	0
TEM	1	S	.00020	15	30	Y	2	2	0	0	2	2	5
TEM	1	S	.00020	16	31	Y	2	3	1	1	1	2	5
TEM	1	S	.00020	16	32	Y	7	5	3	4	1	0	7
TEM	1	S	.00020	17	33	Y	6	6	5	4	0	0	7
TEM	1	S	.00020	17	34	Y	3	4	2	4	0	0	7
TEM	1	S	.00020	18	35	N	0	0	0	0	0	0	0
TEM	1	S	.00020	18	36	Y	0	3	0	0	0	0	2
TEM	1	S	.00020	19	37	N	0	0	0	0	0	0	0
TEM	1	S	.00020	19	38	Y	2	3	1	3	0	0	7
TEM	1	S	.00020	20	39	Y	0	2	0	0	0	0	4
TEM	1	S	.00020	20	40	Y	6	5	5	5	0	0	6
CONTROL	1	M	0.00000	1	1	Y	4	7	0	0	0	0	6
CONTROL	1	M	0.00000	1	2	Y	5	6	0	0	0	0	5
CONTROL	1	M	0.00000	2	3	Y	5	7	2	1	0	0	6
CONTROL	1	M	0.00000	2	4	Y	6	7	0	0	0	0	7
CONTROL	1	M	0.00000	3	5	Y	8	5	1	0	2	3	8
CONTROL	1	M	0.00000	3	6	Y	7	7	1	0	0	0	7
CONTROL	1	M	0.00000	4	7	Y	8	4	0	0	0	0	8
CONTROL	1	M	0.00000	4	8	Y	2	6	0	0	0	0	2
CONTROL	1	M	0.00000	5	9	Y	8	6	0	0	0	0	8
CONTROL	1	M	0.00000	5	10	Y	6	7	0	0	1	1	6
CONTROL	1	M	0.00000	6	11	Y	5	6	0	0	0	0	7
CONTROL	1	M	0.00000	6	12	Y	5	7	1	0	0	0	5
CONTROL	1	M	0.00000	7	13	Y	9	4	0	0	0	0	9
CONTROL	1	M	0.00000	7	14	Y	3	9	0	1	0	0	3
CONTROL	1	M	0.00000	8	15	Y	6	8	0	0	0	0	6
CONTROL	1	M	0.00000	8	16	Y	8	6	2	1	2	1	7
CONTROL	1	M	0.00000	9	17	Y	5	9	0	0	0	0	6
CONTROL	1	M	0.00000	9	18	Y	6	7	0	0	0	0	7
CONTROL	1	M	0.00000	10	19	Y	2	11	0	0	0	0	2
CONTROL	1	M	0.00000	10	20	Y	3	12	0	1	0	0	3

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## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

PAGE 5

TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R	L	R
71-68	1	M 5.00000	31	61	N		0	0	0	0	0	0	0	0
71-68	1	M 5.00000	31	62	Y		7	4	0	0	0	0	7	7
71-68	1	M 5.00000	32	63	Y		5	8	0	3	1	0	5	8
71-68	1	M 5.00000	32	64	Y		5	6	0	0	0	0	6	7
71-68	1	M 5.00000	33	65	Y		7	5	0	0	0	1	7	6
71-68	1	M 5.00000	33	66	Y		7	7	0	0	0	0	7	8
71-68	1	M 5.00000	34	67	Y		6	7	2	1	0	0	6	8
71-68	1	M 5.00000	34	68	Y		10	4	0	0	0	0	10	4
71-68	1	M 5.00000	35	69	Y		4	7	0	0	0	0	6	7
71-68	1	M 5.00000	35	70	Y		7	7	0	0	0	0	7	7
71-68	1	M 5.00000	36	71	Y		4	9	0	0	0	1	4	10
71-68	1	M 5.00000	36	72	Y		6	8	0	0	0	0	6	9
71-68	1	M 5.00000	37	73	Y		6	9	0	0	0	0	7	9
71-68	1	M 5.00000	37	74	Y		9	7	0	0	0	0	9	7
71-68	1	M 5.00000	38	75	Y		3	4	0	0	0	0	3	6
71-68	1	M 5.00000	38	76	Y		6	7	1	0	0	0	7	8
71-68	1	M 5.00000	39	77	Y		6	8	0	0	0	0	7	8
71-68	1	M 5.00000	39	78	N		0	0	0	0	0	0	0	0
71-68	1	M 5.00000	40	79	Y		10	4	1	1	0	0	10	4
71-68	1	M 5.00000	40	80	Y		6	7	0	0	0	0	6	7

DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

PAGE 6

TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEM. NO.	PREG.	IMPLANTS			EARLY DEATHS		LATE DEATHS		CORPORAL LUTEA L	CORPORAL F
								L	R	L	R	L	R		
CONTROL	2	S	0.00000	1	1	Y	6	6	0	0	0	0	7	7	6
CONTROL	2	S	0.00000	1	2	YY	7	6	1	0	1	0	9	3	6
CONTROL	2	S	0.00000	2	3	YY	9	1	0	0	0	0	6	6	6
CONTROL	2	S	0.00000	2	4	YY	6	5	0	0	0	0	7	6	6
CONTROL	2	S	0.00000	3	5	YY	7	6	0	0	1	0	7	7	6
CONTROL	2	S	0.00000	3	6	YY	6	1	0	0	0	0	10	1	1
CONTROL	2	S	0.00000	4	7	YY	5	8	0	0	0	0	5	8	8
CONTROL	2	S	0.00000	4	8	YY	8	5	0	0	0	0	8	8	8
CONTROL	2	S	0.00000	5	9	YY	1	0	1	0	0	0	13	13	7
CONTROL	2	S	0.00000	5	10	YY	5	6	0	0	0	0	6	7	7
CONTROL	2	S	0.00000	6	11	YY	6	5	0	0	0	0	7	7	9
CONTROL	2	S	0.00000	6	12	YY	6	8	0	0	0	0	7	7	6
CONTROL	2	S	0.00000	7	13	YY	7	6	0	0	1	0	7	7	12
CONTROL	2	S	0.00000	7	14	YY	3	9	0	0	0	0	5	12	12
CONTROL	2	S	0.00000	8	15	YY	8	6	0	1	1	1	10	6	8
CONTROL	2	S	0.00000	8	16	YY	2	6	0	0	0	0	2	6	4
CONTROL	2	S	0.00000	9	17	YY	6	4	0	0	0	0	5	5	5
CONTROL	2	S	0.00000	9	18	YY	4	5	0	0	0	0	5	5	6
CONTROL	2	S	0.00000	10	19	YY	2	1	0	0	0	1	7	7	6
CONTROL	2	S	0.00000	10	20	Y	5	6	0	0	0	0	7	7	6
71-68	2	S	.20000	21	41	YY	10	4	2	1	1	0	10	4	4
71-68	2	S	.20000	21	42	YY	6	7	0	0	0	0	6	7	7
71-68	2	S	.20000	22	43	YY	6	7	0	1	0	0	7	7	5
71-68	2	S	.20000	22	44	YY	7	5	0	0	0	0	6	6	6
71-68	2	S	.20000	23	45	YY	5	6	0	0	1	1	6	6	8
71-68	2	S	.20000	23	46	YY	6	8	0	1	0	0	6	6	8
71-68	2	S	.20000	24	47	YY	6	7	0	0	1	1	6	6	7
71-68	2	S	.20000	24	48	YY	8	4	0	0	0	0	8	4	4
71-68	2	S	.20000	25	49	YY	1	5	0	0	0	0	8	8	5
71-68	2	S	.20000	25	50	YY	7	6	0	0	0	0	8	7	7
71-68	2	S	.20000	26	51	YY	7	7	0	0	1	1	7	7	7
71-68	2	S	.20000	26	52	YY	6	6	0	0	0	0	2	6	6
71-68	2	S	.20000	27	53	YY	4	8	0	0	0	0	4	4	8
71-68	2	S	.20000	27	54	YY	8	3	1	1	2	0	4	4	4
71-68	2	S	.20000	28	55	YY	4	11	0	0	0	0	0	0	11
71-68	2	S	.20000	28	56	YY	4	8	0	0	0	0	4	4	9
71-68	2	S	.20000	29	57	YY	4	9	0	0	4	1	4	4	6
71-68	2	S	.20000	29	58	YY	7	6	0	0	1	1	7	7	9
71-68	2	S	.20000	30	59	YY	5	9	0	0	0	0	5	5	9
71-68	2	S	.20000	30	60	Y	5	9	0	0	1	2	1	1	1

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

PAGE 7

TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEM. NO.	PREG.	IMPLANTS L R	EARLY DEATHS		LATE DEATHS		CORPORA LUTEA L R	
								L	R	L	R	L	R
71-68	2	S	1.00000	31	61	Y	6 7	2	2	0	1	6	7
71-68	2	S	1.00000	31	62	Y	2 10	0	1	0	0	3	12
71-68	2	S	1.00000	32	63	Y	4 7	1	0	1	0	4	8
71-68	2	S	1.00000	32	64	Y	0 6	0	1	0	0	4	10
71-68	2	S	1.00000	33	65	Y	3 7	0	1	0	0	4	8
71-68	2	S	1.00000	33	66	Y	5 8	1	2	0	0	5	8
71-68	2	S	1.00000	34	67	Y	7 6	0	0	0	0	8	6
71-68	2	S	1.00000	34	68	Y	7 6	0	0	0	0	7	6
71-68	2	S	1.00000	35	69	Y	4 7	0	0	0	0	5	7
71-68	2	S	1.00000	35	70	Y	4 8	0	0	0	0	4	8
71-68	2	S	1.00000	36	71	Y	7 7	0	0	0	0	7	7
71-68	2	S	1.00000	36	72	Y	6 6	0	0	0	0	6	6
71-68	2	S	1.00000	37	73	Y	5 4	1	0	0	0	5	8
71-68	2	S	1.00000	37	74	Y	9 6	2	1	1	0	9	6
71-68	2	S	1.00000	38	75	N	0 0	0	0	0	0	0	0
71-68	2	S	1.00000	38	76	Y	4 7	0	0	0	0	5	9
71-68	2	S	1.00000	39	77	Y	7 6	1	1	0	0	7	7
71-68	2	S	1.00000	39	78	Y	4 9	0	0	0	0	4	9
71-68	2	S	1.00000	40	79	Y	3 10	0	0	0	0	3	11
71-68	2	S	1.00000	40	80	Y	4 11	0	0	0	0	4	11
71-68	2	S	5.00000	41	81	Y	3 9	0	0	0	0	3	10
71-68	2	S	5.00000	41	82	Y	4 8	0	1	0	0	6	8
71-68	2	S	5.00000	42	83	Y	6 8	1	0	0	0	6	9
71-68	2	S	5.00000	42	84	Y	4 9	0	1	0	0	4	9
71-68	2	S	5.00000	43	85	Y	7 7	0	0	0	0	7	7
71-68	2	S	5.00000	43	86	Y	6 7	0	0	0	0	8	7
71-68	2	S	5.00000	44	87	Y	4 10	0	0	0	0	4	10
71-68	2	S	5.00000	44	88	Y	4 8	0	0	0	0	4	8
71-68	2	S	5.00000	45	89	Y	7 4	1	0	0	0	8	4
71-68	2	S	5.00000	45	90	Y	7 6	0	0	0	0	7	6
71-68	2	S	5.00000	46	91	Y	5 7	1	1	0	0	6	7
71-68	2	S	5.00000	46	92	Y	4 9	0	0	0	0	4	9
71-68	2	S	5.00000	47	93	Y	4 4	1	1	0	0	6	10
71-68	2	S	5.00000	47	94	Y	9 6	0	1	0	0	9	6
71-68	2	S	5.00000	48	95	Y	8 4	0	0	0	0	8	4
71-68	2	S	5.00000	48	96	Y	6 7	0	0	0	1	6	7
71-68	2	S	5.00000	49	97	Y	3 9	0	0	0	0	3	9
71-68	2	S	5.00000	49	98	Y	7 4	1	0	0	0	7	4
71-68	2	S	5.00000	50	99	Y	5 6	0	0	0	0	5	7
71-68	2	S	5.00000	50	100	Y	7 5	0	0	0	0	8	5

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

PAGE 8

TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEMA NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORAL UTEA	
							L	R	L	R	L	R	L	R
TEM	2	S	.00020	11	21	Y	0	1	0	1	0	0	7	3
TEM	2	S	.00020	11	22	Y	2	1	2	1	0	0	7	6
TEM	2	S	.00020	12	23	Y	1	2	1	2	0	0	8	4
TEM	2	S	.00020	12	24	Y	0	1	0	1	0	0	7	1
TEM	2	S	.00020	13	25	Y	1	2	1	2	0	0	11	3
TEM	2	S	.00020	13	26	N	0	0	0	0	0	0	0	0
TEM	2	S	.00020	14	27	N	0	0	0	0	0	0	0	0
TEM	2	S	.00020	14	28	N	0	0	3	4	0	0	0	0
TEM	2	S	.00020	15	29	Y	3	4	3	4	0	0	4	5
TEM	2	S	.00020	15	30	Y	0	0	0	0	0	0	0	0
TEM	2	S	.00020	16	31	Y	4	2	4	2	0	0	8	6
TEM	2	S	.00020	16	32	Y	1	0	1	0	0	0	9	5
TEM	2	S	.00020	17	33	N	0	0	0	0	0	0	0	0
TEM	2	S	.00020	17	34	N	0	0	0	0	0	0	0	0
TEM	2	S	.00020	18	35	N	0	0	0	0	0	0	0	0
TEM	2	S	.00020	18	36	N	0	0	0	0	0	0	0	0
TEM	2	S	.00020	19	37	N	0	0	0	0	0	0	0	0
TEM	2	S	.00020	19	38	N	0	0	0	0	0	0	0	0
TEM	2	S	.00020	20	39	Y	3	0	3	0	0	0	10	5
TEM	2	S	.00020	20	40	N	0	0	0	0	0	0	0	0
CONTROL	2	M	0.00000	1	1	Y	4	7	0	0	0	0	4	8
CONTROL	2	M	0.00000	1	2	Y	5	9	0	0	0	0	5	10
CONTROL	2	M	0.00000	2	3	YY	7	6	0	0	0	0	7	8
CONTROL	2	M	0.00000	2	4	YY	8	6	0	0	1	0	8	6
CONTROL	2	M	0.00000	3	5	YY	5	2	0	0	0	0	5	8
CONTROL	2	M	0.00000	3	6	YY	5	5	0	0	0	0	5	6
CONTROL	2	M	0.00000	4	7	YY	8	2	0	0	2	0	8	2
CONTROL	2	M	0.00000	4	8	Y	0	0	0	0	0	0	0	0
CONTROL	2	M	0.00000	5	9	YY	7	5	0	0	0	0	8	5
CONTROL	2	M	0.00000	5	10	YY	3	8	0	0	0	0	3	8
CONTROL	2	M	0.00000	6	11	YY	6	6	1	0	1	1	6	6
CONTROL	2	M	0.00000	6	12	YY	7	7	0	0	0	0	7	7
CONTROL	2	M	0.00000	7	13	YY	6	7	0	0	0	0	6	7
CONTROL	2	M	0.00000	7	14	YY	7	5	1	0	0	1	7	5
CONTROL	2	M	0.00000	8	15	YY	10	5	3	2	0	0	10	5
CONTROL	2	M	0.00000	8	16	YY	5	8	0	0	0	0	6	8
CONTROL	2	M	0.00000	9	17	YY	6	9	0	2	0	0	6	9
CONTROL	2	M	0.00000	9	18	YY	5	9	0	0	0	0	6	9
CONTROL	2	M	0.00000	10	19	YY	6	6	3	2	0	3	6	6
CONTROL	2	M	0.00000	10	20	Y	8	5	0	0	0	0	8	5

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORAL UTEA	
							L	R	L	R	L	R	L	R
71-68	2	M	.20000	11	21	Y	8	4	0	0	0	0	8	4
71-68	2	M	.20000	11	22	Y	8	5	0	0	0	0	8	5
71-68	2	M	.20000	12	23	Y	6	7	3	3	0	3	7	9
71-68	2	M	.20000	12	24	Y	7	5	1	0	0	0	7	7
71-68	2	M	.20000	13	25	Y	5	9	0	0	0	0	5	9
71-68	2	M	.20000	13	26	Y	8	6	0	0	0	0	8	7
71-68	2	M	.20000	14	27	Y	6	6	0	0	1	1	6	8
71-68	2	M	.20000	14	28	Y	5	7	0	0	0	1	5	7
71-68	2	M	.20000	15	29	Y	6	6	0	0	2	3	7	7
71-68	2	M	.20000	15	30	Y	6	1	1	1	0	0	6	15
71-68	2	M	.20000	16	31	Y	4	9	0	0	0	0	5	9
71-68	2	M	.20000	16	32	Y	6	5	0	0	2	1	8	7
71-68	2	M	.20000	17	33	Y	6	4	2	0	0	0	7	4
71-68	2	M	.20000	17	34	Y	6	6	0	1	0	0	7	6
71-68	2	M	.20000	18	35	Y	5	5	0	0	0	0	6	5
71-68	2	M	.20000	18	36	Y	5	8	0	0	0	0	5	8
71-68	2	M	.20000	19	37	Y	8	7	0	0	1	0	8	7
71-68	2	M	.20000	19	38	Y	5	7	0	1	0	0	5	9
71-68	2	M	.20000	20	39	Y	6	7	0	0	0	0	6	7
71-68	2	M	.20000	20	40	Y	7	8	1	0	0	0	7	8
71-68	2	M	1.00000	21	41	Y	5	0	1	0	1	0	10	5
71-68	2	M	1.00000	21	42	Y	4	9	0	2	0	0	4	11
71-68	2	M	1.00000	22	43	Y	5	7	1	0	0	0	5	7
71-68	2	M	1.00000	22	44	Y	4	10	0	0	0	0	4	10
71-68	2	M	1.00000	23	45	Y	5	8	0	0	1	1	5	9
71-68	2	M	1.00000	23	46	Y	9	6	0	0	0	0	9	6
71-68	2	M	1.00000	24	47	Y	9	5	0	0	0	0	9	5
71-68	2	M	1.00000	24	48	Y	7	5	0	1	0	0	9	5
71-68	2	M	1.00000	25	49	Y	5	10	0	0	0	0	6	10
71-68	2	M	1.00000	25	50	Y	8	7	0	0	0	0	8	7
71-68	2	M	1.00000	26	51	Y	5	8	2	4	0	0	5	8
71-68	2	M	1.00000	26	52	Y	9	6	1	0	0	0	10	6
71-68	2	M	1.00000	27	53	Y	7	7	0	2	0	0	7	7
71-68	2	M	1.00000	27	54	Y	5	6	1	2	0	0	5	6
71-68	2	M	1.00000	28	55	Y	6	5	1	1	0	0	6	5
71-68	2	M	1.00000	28	56	Y	5	8	1	0	0	0	5	9
71-68	2	M	1.00000	29	57	Y	4	8	0	0	2	2	4	8
71-68	2	M	1.00000	29	58	Y	5	8	0	0	0	0	5	8
71-68	2	M	1.00000	30	59	Y	0	6	0	0	0	0	6	6
71-68	2	M	1.00000	30	60	Y	5	8	0	0	0	0	7	12

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M DOSE	MALE NO.	FEMA- NO.	PREG.	IMPLANTS L R	EARLY DEATHS		LATE DEATHS		CORPORA LUTEA L R	
							L	R	L	R	L	R
71-68	2	M 5.00000	31	61	Y	8 7	2	0	0	0	8	7
71-68	2	M 5.00000	31	62	Y	6 8	0	0	0	0	6	8
71-68	2	M 5.00000	32	63	Y	12 2	1	2	0	0	12	2
71-68	2	M 5.00000	32	64	Y	8 6	1	0	0	0	8	6
71-68	2	M 5.00000	33	65	Y	5 8	0	0	0	0	6	8
71-68	2	M 5.00000	33	66	Y	7 6	2	0	0	0	7	6
71-68	2	M 5.00000	34	67	Y	8 6	0	0	0	0	8	6
71-68	2	M 5.00000	34	68	Y	6 7	0	0	0	0	7	7
71-68	2	M 5.00000	35	69	Y	7 7	0	0	0	0	7	7
71-68	2	M 5.00000	35	70	Y	7 5	0	0	0	0	7	6
71-68	2	M 5.00000	36	71	Y	8 6	0	0	0	0	8	6
71-68	2	M 5.00000	36	72	Y	8 8	0	0	0	0	8	8
71-68	2	M 5.00000	37	73	Y	9 7	1	0	0	0	9	8
71-68	2	M 5.00000	37	74	Y	8 3	0	0	0	0	9	3
71-68	2	M 5.00000	38	75	Y	7 7	0	0	1	1	7	7
71-68	2	M 5.00000	38	76	Y	3 9	0	0	0	0	3	9
71-68	2	M 5.00000	39	77	Y	7 8	0	2	0	0	8	8
71-68	2	M 5.00000	39	78	Y	4 9	0	1	0	0	4	10
71-68	2	M 5.00000	40	79	Y	6 8	0	0	0	0	7	8
71-68	2	M 5.00000	40	80	Y	8 2	0	0	0	0	8	2

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEM NO.	PREG.	IMPLANTS	EARLY DEATHS		LATE DEATHS		CORPORA LUTEA		
								L	R	L	R	L	R	
CONTROL	3	S	0.00000	1	1	Y	5	8	0	0	0	0	5	9
CONTROL	3	S	0.00000	1	2	Y	6	8	1	2	0	1	6	8
CONTROL	3	S	0.00000	2	3	Y	5	6	0	1	0	0	6	7
CONTROL	3	S	0.00000	2	4	Y	2	9	2	1	0	0	2	10
CONTROL	3	S	0.00000	3	5	Y	3	10	0	0	0	0	3	10
CONTROL	3	S	0.00000	3	6	Y	8	7	0	0	3	0	8	7
CONTROL	3	S	0.00000	4	7	Y	6	4	0	0	1	0	8	4
CONTROL	3	S	0.00000	4	8	Y	7	6	0	0	0	0	8	6
CONTROL	3	S	0.00000	5	9	Y	6	6	0	0	0	0	6	6
CONTROL	3	S	0.00000	5	10	Y	8	4	0	0	2	2	8	4
CONTROL	3	S	0.00000	6	11	Y	8	4	0	0	0	1	8	4
CONTROL	3	S	0.00000	6	12	Y	5	10	0	0	0	0	5	10
CONTROL	3	S	0.00000	7	13	Y	1	7	0	0	0	0	1	11
CONTROL	3	S	0.00000	7	14	Y	6	0	0	0	0	0	6	10
CONTROL	3	S	0.00000	8	15	Y	5	9	0	0	2	3	6	10
CONTROL	3	S	0.00000	8	16	Y	6	6	0	1	1	0	9	7
CONTROL	3	S	0.00000	9	17	Y	10	5	0	0	0	2	10	5
CONTROL	3	S	0.00000	9	18	Y	4	8	0	0	0	0	6	8
CONTROL	3	S	0.00000	10	19	Y	3	10	0	0	1	0	3	10
CONTROL	3	S	0.00000	10	20	Y	6	7	1	0	0	0	6	7
71-68	3	S	.20000	21	41	Y	5	7	0	0	0	0	6	7
71-68	3	S	.20000	21	42	Y	6	6	0	0	0	0	6	6
71-68	3	S	.20000	22	43	Y	6	5	0	0	0	0	10	5
71-68	3	S	.20000	22	44	Y	7	6	0	0	0	0	7	6
71-68	3	S	.20000	23	45	Y	9	3	3	0	0	0	11	4
71-68	3	S	.20000	23	46	Y	4	8	0	0	0	0	6	10
71-68	3	S	.20000	24	47	Y	8	5	0	0	0	0	9	5
71-68	3	S	.20000	24	48	Y	7	6	1	1	1	0	7	6
71-68	3	S	.20000	25	49	Y	7	4	1	0	2	0	9	5
71-68	3	S	.20000	25	50	Y	7	7	0	0	0	0	7	7
71-68	3	S	.20000	26	51	Y	7	6	0	0	0	1	7	6
71-68	3	S	.20000	26	52	Y	7	9	1	0	0	0	7	9
71-68	3	S	.20000	27	53	Y	7	7	0	0	0	2	7	7
71-68	3	S	.20000	27	54	Y	9	4	1	0	0	1	9	4
71-68	3	S	.20000	28	55	Y	7	7	1	1	0	0	8	7
71-68	3	S	.20000	28	56	Y	8	7	0	0	0	0	8	7
71-68	3	S	.20000	29	57	Y	3	11	0	0	0	1	3	11
71-68	3	S	.20000	29	58	Y	8	4	0	0	1	0	8	6
71-68	3	S	.20000	30	59	Y	7	5	0	0	0	1	7	5
71-68	3	S	.20000	30	60	Y	7	6	0	0	0	1	8	7

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORAL LUTEA	
						L	R	L	R	L	R	L	R
71-68	3	S 1.00000	31	61	Y	8	7	0	0	0	2	8	7
71-68	3	S 1.00000	31	62	Y	3	11	1	1	0	0	3	11
71-68	3	S 1.00000	32	63	Y	4	8	1	1	0	0	4	8
71-68	3	S 1.00000	32	64	Y	6	7	0	0	0	0	8	7
71-68	3	S 1.00000	33	65	Y	8	4	0	0	0	0	9	4
71-68	3	S 1.00000	33	66	Y	7	6	0	0	2	1	7	6
71-68	3	S 1.00000	34	67	Y	7	7	1	0	0	0	7	7
71-68	3	S 1.00000	34	68	Y	4	11	0	0	1	0	4	11
71-68	3	S 1.00000	35	69	Y	8	5	2	0	1	0	11	6
71-68	3	S 1.00000	35	70	Y	8	5	0	0	0	0	8	6
71-68	3	S 1.00000	36	71	Y	7	3	0	0	0	0	7	4
71-68	3	S 1.00000	36	72	Y	9	3	0	1	1	0	9	4
71-68	3	S 1.00000	37	73	Y	1	9	0	1	0	0	2	9
71-68	3	S 1.00000	37	74	Y	7	4	0	0	0	0	8	4
71-68	3	S 1.00000	38	75	Y	8	3	0	0	0	0	8	3
71-68	3	S 1.00000	38	76	Y	6	5	0	0	0	0	6	6
71-68	3	S 1.00000	39	77	Y	6	6	0	0	0	0	6	6
71-68	3	S 1.00000	39	78	Y	5	7	0	0	0	0	5	7
71-68	3	S 1.00000	40	79	Y	2	0	0	0	0	0	8	4
71-68	3	S 1.00000	40	80	N	0	0	0	0	0	0	0	0
71-68	3	S 5.00000	41	81	Y	6	8	0	1	0	0	6	8
71-68	3	S 5.00000	41	82	Y	8	5	0	0	0	0	8	5
71-68	3	S 5.00000	42	83	Y	7	8	0	0	0	0	7	9
71-68	3	S 5.00000	42	84	Y	0	9	0	0	0	0	3	9
71-68	3	S 5.00000	43	85	Y	6	9	0	2	0	0	9	12
71-68	3	S 5.00000	43	86	Y	7	7	0	0	0	0	7	8
71-68	3	S 5.00000	44	87	Y	5	10	0	0	0	0	7	10
71-68	3	S 5.00000	44	88	Y	5	9	0	0	0	0	1	5
71-68	3	S 5.00000	45	89	Y	8	8	0	0	0	0	8	8
71-68	3	S 5.00000	45	90	Y	7	6	1	0	0	1	7	7
71-68	3	S 5.00000	46	91	Y	7	7	0	0	0	0	7	8
71-68	3	S 5.00000	46	92	Y	8	6	0	0	0	0	8	6
71-68	3	S 5.00000	47	93	Y	7	5	0	0	0	0	7	5
71-68	3	S 5.00000	47	94	Y	7	6	0	0	0	0	7	6
71-68	3	S 5.00000	48	95	Y	9	4	0	0	0	0	9	4
71-68	3	S 5.00000	48	96	Y	4	6	0	0	0	0	6	8
71-68	3	S 5.00000	49	97	Y	6	6	0	0	2	2	6	7
71-68	3	S 5.00000	49	98	Y	3	10	0	0	0	0	3	10
71-68	3	S 5.00000	50	99	Y	8	7	0	2	2	0	1	8
71-68	3	S 5.00000	50	100	Y	9	2	0	2	0	0	9	2

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORAL LUTEA	
							L	R	L	R	L	R	L	R
TEM	3	S	.00020	11	21	Y	2	0	2	0	0	0	6	4
TEM	3	S	.00020	11	22	YY	1	2	1	2	0	0	6	6
TEM	3	S	.00020	12	23	YY	1	0	1	0	0	0	2	6
TEM	3	S	.00020	12	24	YY	2	0	2	0	0	0	8	4
TEM	3	S	.00020	13	25	YY	1	0	1	0	0	0	7	6
TEM	3	S	.00020	13	26	YY	0	1	1	0	0	0	5	6
TEM	3	S	.00020	14	27	YY	1	0	1	0	0	0	5	5
TEM	3	S	.00020	14	28	YY	0	1	0	1	0	0	4	4
TEM	3	S	.00020	15	29	YY	2	0	2	0	0	0	5	7
TEM	3	S	.00020	15	30	YY	0	1	0	1	0	0	3	6
TEM	3	S	.00020	16	31	YY	0	1	0	1	0	0	8	12
TEM	3	S	.00020	16	32	YY	0	2	0	2	0	0	2	8
TEM	3	S	.00020	17	33	YY	2	6	0	2	0	0	5	6
TEM	3	S	.00020	17	34	YY	4	9	2	6	0	0	4	9
TEM	3	S	.00020	18	35	NY	0	0	0	0	0	0	0	0
TEM	3	S	.00020	18	36	YY	1	0	0	0	0	1	6	9
TEM	3	S	.00020	19	37	NY	0	0	0	0	0	0	0	0
TEM	3	S	.00020	19	38	YY	0	1	0	0	1	0	5	8
TEM	3	S	.00020	20	39	NY	0	0	0	0	0	0	0	0
TEM	3	S	.00020	20	40	Y	2	0	2	0	0	0	9	4
CONTROL	3	M	0.00000	1	1	Y	8	4	1	0	0	0	8	4
CONTROL	3	M	0.00000	1	2	YY	6	8	0	2	0	0	6	8
CONTROL	3	M	0.00000	2	3	YY	5	8	0	1	0	0	5	8
CONTROL	3	M	0.00000	2	4	YY	5	8	0	1	0	0	6	8
CONTROL	3	M	0.00000	3	5	YY	6	5	0	0	0	0	6	6
CONTROL	3	M	0.00000	3	6	YY	2	11	0	0	0	0	2	11
CONTROL	3	M	0.00000	4	7	YY	7	9	0	0	0	0	8	9
CONTROL	3	M	0.00000	4	8	NY	0	0	0	0	0	0	0	0
CONTROL	3	M	0.00000	5	9	YY	6	7	0	1	1	0	6	7
CONTROL	3	M	0.00000	5	10	YY	8	3	0	0	0	0	8	4
CONTROL	3	M	0.00000	6	11	YY	3	6	0	0	1	1	4	7
CONTROL	3	M	0.00000	6	12	YY	8	5	0	0	0	0	8	5
CONTROL	3	M	0.00000	7	13	YY	8	8	0	0	0	0	8	8
CONTROL	3	M	0.00000	7	14	YY	3	8	1	1	0	0	3	8
CONTROL	3	M	0.00000	8	15	YY	6	6	0	0	0	0	7	6
CONTROL	3	M	0.00000	8	16	YY	9	3	0	0	0	0	9	3
CONTROL	3	M	0.00000	9	17	YY	6	5	1	0	1	0	7	5
CONTROL	3	M	0.00000	9	18	YY	5	8	0	0	0	0	8	5
CONTROL	3	M	0.00000	10	19	Y	2	8	0	0	0	0	2	9

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TFST MATERIAL	WEEK	S/M	DOSE	MALE NO.	MALE NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R	L	R
71-68	3	M	.20000	11	21	Y	5	6	0	0	3	2	10	13
71-68	3	M	.20000	11	22	Y	8	4	0	0	0	0	8	6
71-68	3	M	.20000	12	23	Y	8	6	0	1	0	0	9	6
71-68	3	M	.20000	12	24	Y	4	8	0	0	0	0	5	8
71-68	3	M	.20000	13	25	Y	6	0	0	0	0	0	6	9
71-68	3	M	.20000	13	26	YY	3	11	0	1	0	0	4	11
71-68	3	M	.20000	14	27	Y	6	5	0	0	1	0	6	5
71-68	3	M	.20000	14	28	Y	6	9	1	1	0	0	7	9
71-68	3	M	.20000	15	29	Y	6	5	1	1	0	0	6	5
71-68	3	M	.20000	15	30	Y	8	6	0	0	0	0	8	7
71-68	3	M	.20000	16	31	Y	7	6	2	1	0	0	7	5
71-68	3	M	.20000	16	32	Y	6	5	1	0	0	0	5	8
71-68	3	M	.20000	17	33	Y	4	7	0	0	0	0	5	9
71-68	3	M	.20000	17	34	Y	5	9	0	0	0	0	4	10
71-68	3	M	.20000	18	35	Y	4	9	0	0	0	1	0	5
71-68	3	M	.20000	18	36	YY	5	11	0	0	0	0	5	11
71-68	3	M	.20000	19	37	Y	6	9	1	1	1	0	6	10
71-68	3	M	.20000	19	38	Y	8	3	1	0	0	0	8	4
71-68	3	M	.20000	20	39	Y	5	8	0	0	0	0	6	8
71-68	3	M	.20000	20	40	Y	10	5	0	0	0	0	10	5
71-68	3	M	1.00000	21	41	Y	9	6	0	0	1	0	9	6
71-68	3	M	1.00000	21	42	YY	5	5	0	0	0	0	8	6
71-68	3	M	1.00000	22	43	YY	5	10	0	0	0	0	6	10
71-68	3	M	1.00000	22	44	Y	4	9	0	0	0	0	5	9
71-68	3	M	1.00000	23	45	YY	10	4	1	0	0	0	10	4
71-68	3	M	1.00000	23	46	Y	7	6	0	0	0	0	7	6
71-68	3	M	1.00000	24	47	YY	9	9	0	1	1	1	9	9
71-68	3	M	1.00000	24	48	Y	7	6	1	1	1	0	7	7
71-68	3	M	1.00000	25	49	Y	7	6	2	0	0	0	7	6
71-68	3	M	1.00000	25	50	YY	3	8	0	0	0	0	3	8
71-68	3	M	1.00000	26	51	Y	7	5	0	0	0	0	7	7
71-68	3	M	1.00000	26	52	YY	5	8	0	0	0	0	5	8
71-68	3	M	1.00000	27	53	YY	5	7	0	0	0	0	7	7
71-68	3	M	1.00000	27	54	Y	4	8	1	0	0	0	4	9
71-68	3	M	1.00000	28	55	Y	4	6	0	0	0	0	4	9
71-68	3	M	1.00000	28	56	Y	5	9	0	0	0	0	5	9
71-68	3	M	1.00000	29	57	Y	5	6	0	1	1	1	5	6
71-68	3	M	1.00000	29	58	Y	5	6	1	1	1	1	3	7
71-68	3	M	1.00000	30	59	Y	3	7	1	1	1	0	1	0
71-68	3	M	1.00000	30	60	Y	5	3	0	0	1	0	6	3

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS	EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R
71-68	3	M 5.00000	31	61	Y	9	6	0	1	0	0	10 7
71-68	3	M 5.00000	31	62	Y	12	4	1	0	0	0	12 4
71-68	3	M 5.00000	32	63	Y	5	8	0	1	0	0	8 11
71-68	3	M 5.00000	32	64	Y	5	8	0	0	0	0	6 8
71-68	3	M 5.00000	33	65	Y	6	9	1	0	0	0	9 10
71-68	3	M 5.00000	33	66	Y	6	6	0	0	0	0	6 7
71-68	3	M 5.00000	34	67	Y	6	7	0	0	0	0	6 8
71-68	3	M 5.00000	34	68	Y	6	8	1	0	0	0	6 8
71-68	3	M 5.00000	35	69	Y	4	8	0	0	0	0	4 8
71-68	3	M 5.00000	35	70	Y	9	4	1	0	0	0	10 4
71-68	3	M 5.00000	36	71	Y	7	8	0	0	0	0	7 8
71-68	3	M 5.00000	36	72	Y	5	8	0	0	0	0	5 10
71-68	3	M 5.00000	37	73	Y	3	9	0	0	0	0	3 11
71-68	3	M 5.00000	37	74	Y	7	6	0	1	0	0	8 6
71-68	3	M 5.00000	38	75	Y	9	5	0	0	0	0	9 6
71-68	3	M 5.00000	38	76	Y	5	9	0	1	0	1	5 9
71-68	3	M 5.00000	39	77	Y	8	6	1	0	0	0	8 6
71-68	3	M 5.00000	39	78	Y	6	9	0	0	1	0	6 9
71-68	3	M 5.00000	40	79	Y	9	3	1	0	0	0	9 3
71-68	3	M 5.00000	40	80	Y	4	7	0	1	0	0	5 7

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

SODIUM ERYTHORBATE

PAGE 16

TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FE NU.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R	L	R
CONTROL	4	S	0.00000	1	1	Y	4	9	0	0	0	0	4	9
CONTROL	4	S	0.00000	1	2	YY	4	7	0	0	0	1	5	9
CONTROL	4	S	0.00000	2	3	YY	5	9	0	0	1	1	5	10
CONTROL	4	S	0.00000	2	4	YY	4	1	0	1	0	0	7	9
CONTROL	4	S	0.00000	3	5	YY	6	9	0	0	0	1	6	9
CONTROL	4	S	0.00000	3	6	YY	5	7	0	0	0	0	5	7
CONTROL	4	S	0.00000	4	7	YY	1	0	0	0	0	0	4	7
CONTROL	4	S	0.00000	4	8	YY	6	7	0	0	0	0	7	8
CONTROL	4	S	0.00000	5	9	YY	6	6	0	0	3	1	6	7
CONTROL	4	S	0.00000	5	10	YY	10	2	0	0	0	0	10	4
CONTROL	4	S	0.00000	6	11	N	0	0	0	0	0	0	0	0
CONTROL	4	S	0.00000	6	12	YY	6	8	0	0	0	0	7	9
CONTROL	4	S	0.00000	7	13	YY	6	7	0	1	0	0	6	7
CONTROL	4	S	0.00000	7	14	YY	3	8	1	0	0	0	3	10
CONTROL	4	S	0.00000	8	15	YY	7	4	0	0	0	0	7	4
CONTROL	4	S	0.00000	8	16	YY	8	6	4	1	0	1	8	6
CONTROL	4	S	0.00000	9	17	YY	10	4	0	0	0	0	11	4
CONTROL	4	S	0.00000	9	18	YY	9	7	1	1	0	0	9	7
CONTROL	4	S	0.00000	10	19	YY	4	6	0	0	2	1	4	7
CONTROL	4	S	0.00000	10	20	Y	6	8	4	4	0	0	7	9
71-68	4	S	.20000	21	41	YY	7	6	0	1	0	0	8	6
71-68	4	S	.20000	21	42	YY	6	8	0	0	0	0	6	8
71-68	4	S	.20000	22	43	YY	8	4	0	0	0	0	8	4
71-68	4	S	.20000	22	44	YY	4	4	2	0	0	0	8	5
71-68	4	S	.20000	23	45	YY	6	9	0	0	0	0	7	9
71-68	4	S	.20000	23	46	YY	4	10	1	5	0	0	5	10
71-68	4	S	.20000	24	47	YY	8	2	0	0	0	0	8	6
71-68	4	S	.20000	24	48	YY	5	8	0	0	0	0	5	8
71-68	4	S	.20000	25	49	YY	8	6	1	0	0	0	9	7
71-68	4	S	.20000	25	50	YY	5	7	1	0	0	0	5	7
71-68	4	S	.20000	26	51	YY	8	7	0	0	0	0	8	8
71-68	4	S	.20000	26	52	YY	8	3	0	0	0	0	8	3
71-68	4	S	.20000	27	53	YY	6	6	0	0	0	0	6	6
71-68	4	S	.20000	27	54	YY	10	4	0	0	0	0	10	4
71-68	4	S	.20000	28	55	YY	5	5	5	5	0	0	6	5
71-68	4	S	.20000	28	56	YY	8	6	0	0	0	1	8	6
71-68	4	S	.20000	29	57	YY	6	7	0	0	1	0	6	7
71-68	4	S	.20000	29	58	YY	1	0	1	0	0	0	9	2
71-68	4	S	.20000	30	59	YY	5	8	0	0	1	1	7	8
71-68	4	S	.20000	30	60	Y	5	8	0	1	1	1	7	9

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

PAGE 17

TEST MATERIAL	WEEK	S/M DOSE	MALE NO.	FEMAL NO.	PREG.	IMPLANTS	EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R
71-68	4	S 1.00000	31	61	Y	8	6	0	0	2	1	9 6
71-68	4	S 1.00000	31	62	Y	5	10	0	0	0	1	5 10
71-68	4	S 1.00000	32	63	Y	3	10	0	0	1	2	3 12
71-68	4	S 1.00000	32	64	Y	5	9	0	0	0	0	5 9
71-68	4	S 1.00000	33	65	Y	6	9	0	0	1	1	8 9
71-68	4	S 1.00000	33	66	Y	8	6	0	0	0	1	9 6
71-68	4	S 1.00000	34	67	Y	6	8	3	0	1	1	6 8
71-68	4	S 1.00000	34	68	Y	5	3	0	0	1	1	5 8
71-68	4	S 1.00000	35	69	Y	7	3	0	1	0	0	8 7
71-68	4	S 1.00000	35	70	Y	8	5	0	0	0	0	8 6
71-68	4	S 1.00000	36	71	Y	7	7	0	0	0	0	7 7
71-68	4	S 1.00000	36	72	Y	8	5	0	0	0	0	8 5
71-68	4	S 1.00000	37	73	Y	8	3	0	0	0	0	8 3
71-68	4	S 1.00000	37	74	Y	6	10	0	0	1	0	6 10
71-68	4	S 1.00000	38	75	Y	7	6	0	1	0	0	7 6
71-68	4	S 1.00000	38	76	Y	7	5	0	0	0	0	7 5
71-68	4	S 1.00000	39	77	Y	7	5	0	0	0	0	7 5
71-68	4	S 1.00000	39	78	Y	6	7	0	0	0	0	6 7
71-68	4	S 1.00000	40	79	Y	7	7	0	1	0	0	7 7
71-68	4	S 1.00000	40	80	Y	5	4	1	0	0	0	7 6
71-68	4	S 5.00000	41	81	Y	5	7	0	0	0	0	6 7
71-68	4	S 5.00000	41	82	Y	7	7	0	0	1	0	7 7
71-68	4	S 5.00000	42	83	Y	5	3	0	0	0	0	8 5
71-68	4	S 5.00000	42	84	Y	5	6	0	0	0	0	5 7
71-68	4	S 5.00000	43	85	Y	3	7	0	0	0	0	4 8
71-68	4	S 5.00000	43	86	Y	7	8	0	0	1	1	7 8
71-68	4	S 5.00000	44	87	Y	9	4	0	0	0	0	10 4
71-68	4	S 5.00000	44	88	Y	9	3	0	0	0	0	9 4
71-68	4	S 5.00000	45	89	Y	7	6	0	0	1	0	7 6
71-68	4	S 5.00000	45	90	Y	7	8	0	0	1	2	10 8
71-68	4	S 5.00000	46	91	Y	7	7	0	0	0	0	8 8
71-68	4	S 5.00000	46	92	Y	2	1	1	0	0	0	8 7
71-68	4	S 5.00000	47	93	Y	5	9	1	0	0	0	5 10
71-68	4	S 5.00000	47	94	Y	7	9	1	0	1	1	7 9
71-68	4	S 5.00000	48	95	Y	10	3	0	0	4	0	11 4
71-68	4	S 5.00000	48	96	Y	5	9	0	0	1	0	6 9
71-68	4	S 5.00000	49	97	Y	7	5	0	1	0	0	7 5
71-68	4	S 5.00000	49	98	Y	8	5	0	0	0	0	8 5
71-68	4	S 5.00000	50	99	Y	4	7	1	0	0	0	4 7
71-68	4	S 5.00000	50	100	Y	3	9	0	0	1	0	5 9

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R	L	R
TEM	4	S	.00020	11	21	Y	2	3	2	3	0	0	9	9
TEM	4	S	.00020	11	22	YY	1	0	1	0	0	0	6	6
TEM	4	S	.00020	12	23	Y	1	2	1	2	0	0	10	5
TEM	4	S	.00020	12	24	N	0	0	0	0	0	0	0	0
TEM	4	S	.00020	13	25	YY	4	2	4	2	0	0	10	6
TEM	4	S	.00020	13	26	NN	0	0	0	0	0	0	0	0
TEM	4	S	.00020	14	27	Y	0	0	0	0	0	0	6	6
TEM	4	S	.00020	14	28	YY	2	1	2	1	0	0	6	7
TEM	4	S	.00020	15	29	Y	1	0	1	0	0	0	5	7
TEM	4	S	.00020	15	30	NN	0	0	0	0	0	0	0	0
TEM	4	S	.00020	16	31	N	0	0	0	0	0	0	5	7
TEM	4	S	.00020	16	32	Y	2	2	2	2	0	0	7	9
TEM	4	S	.00020	17	33	YY	7	8	0	0	0	0	8	7
TEM	4	S	.00020	17	34	Y	8	6	0	0	0	0	8	8
TEM	4	S	.00020	18	35	Y	1	0	1	0	0	0	0	0
TEM	4	S	.00020	18	36	NN	0	0	0	0	0	0	0	0
TEM	4	S	.00020	19	37	N	0	0	0	0	0	0	0	0
TEM	4	S	.00020	19	38	Y	0	0	0	0	0	0	0	0
TEM	4	S	.00020	20	39	YY	1	0	1	0	0	0	8	5
TEM	4	S	.00020	20	40	Y	0	1	0	0	0	1	8	4
CONTROL	4	M	0.00000	1	1	Y	6	4	0	0	1	1	8	4
CONTROL	4	M	0.00000	1	2	YY	4	8	0	0	2	0	4	8
CONTROL	4	M	0.00000	2	3	Y	2	7	1	0	0	0	6	8
CONTROL	4	M	0.00000	2	4	YY	8	4	0	0	1	0	10	4
CONTROL	4	M	0.00000	3	5	YY	6	6	0	0	0	0	6	6
CONTROL	4	M	0.00000	3	6	Y	8	5	3	0	0	0	10	5
CONTROL	4	M	0.00000	4	7	YY	8	0	0	0	2	0	8	6
CONTROL	4	M	0.00000	4	8	Y	7	7	3	2	0	1	7	7
CONTROL	4	M	0.00000	5	9	YY	7	7	0	1	0	1	9	7
CONTROL	4	M	0.00000	5	10	Y	8	7	0	1	0	0	8	4
CONTROL	4	M	0.00000	6	11	YY	6	9	0	0	0	4	7	9
CONTROL	4	M	0.00000	6	12	Y	4	7	0	1	0	0	4	7
CONTROL	4	M	0.00000	7	13	YY	7	3	0	0	0	0	10	3
CONTROL	4	M	0.00000	7	14	Y	8	6	0	0	0	0	8	6
CONTROL	4	M	0.00000	8	15	YY	9	5	0	1	3	0	9	5
CONTROL	4	M	0.00000	8	16	Y	10	3	1	0	0	0	10	3
CONTROL	4	M	0.00000	9	17	YY	5	7	0	0	0	0	8	4
CONTROL	4	M	0.00000	9	18	Y	7	4	1	1	0	0	2	2
CONTROL	4	M	0.00000	10	19	YY	1	10	0	0	0	0	5	10
CONTROL	4	M	0.00000	10	20	Y	1	6	0	0	0	0	5	6



## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

PAGE 20

TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	F. NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R	L	R
71-68	4	M	5.00000	31	61	Y	5	10	0	0	0	0	6	10
71-68	4	M	5.00000	31	62	Y	8	4	0	0	2	0	8	4
71-68	4	M	5.00000	32	63	Y	9	2	1	1	0	0	9	2
71-68	4	M	5.00000	32	64	Y	9	7	1	0	0	0	9	7
71-68	4	M	5.00000	33	65	Y	7	6	0	0	0	0	8	12
71-68	4	M	5.00000	33	66	Y	8	4	0	0	0	0	8	7
71-68	4	M	5.00000	34	67	Y	7	5	0	0	0	0	8	6
71-68	4	M	5.00000	34	68	Y	3	7	0	0	0	0	4	9
71-68	4	M	5.00000	35	69	Y	3	8	0	0	0	0	3	11
71-68	4	M	5.00000	35	70	Y	6	6	0	0	0	0	6	6
71-68	4	M	5.00000	36	71	Y	4	5	0	0	0	0	5	5
71-68	4	M	5.00000	36	72	Y	4	6	0	0	0	0	5	8
71-68	4	M	5.00000	37	73	Y	5	6	1	0	0	0	5	6
71-68	4	M	5.00000	37	74	Y	7	2	1	0	0	0	8	2
71-68	4	M	5.00000	38	75	Y	8	6	0	0	0	0	8	6
71-68	4	M	5.00000	38	76	Y	8	4	0	0	0	0	8	5
71-68	4	M	5.00000	39	77	Y	4	10	0	0	0	0	4	10
71-68	4	M	5.00000	39	78	Y	4	5	0	0	0	0	4	6
71-68	4	M	5.00000	40	79	Y	5	8	0	1	0	0	5	10
71-68	4	M	5.00000	40	80	Y	7	6	2	0	0	0	9	6

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

PAGE 21

TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R	L	R
CONTROL	5	S	0.00000	1	1	Y	7	4	0	0	0	1	7	7
CONTROL	5	S	0.00000	1	2	Y	10	3	0	0	2	1	10	4
CONTROL	5	S	0.00000	2	3	Y	6	7	0	0	0	0	7	7
CONTROL	5	S	0.00000	2	4	Y	5	10	0	0	0	0	6	10
CONTROL	5	S	0.00000	3	5	Y	9	3	0	0	0	0	10	6
CONTROL	5	S	0.00000	3	6	Y	6	6	0	0	0	0	7	6
CONTROL	5	S	0.00000	4	7	Y	7	5	0	0	0	0	7	5
CONTROL	5	S	0.00000	4	8	Y	4	8	0	0	0	1	5	8
CONTROL	5	S	0.00000	5	9	Y	8	4	0	0	1	0	10	4
CONTROL	5	S	0.00000	5	10	Y	5	5	0	0	0	0	5	6
CONTROL	5	S	0.00000	6	11	Y	7	5	0	0	0	0	7	8
CONTROL	5	S	0.00000	6	12	Y	5	9	0	0	0	0	6	9
CONTROL	5	S	0.00000	7	13	Y	5	5	1	0	0	0	6	5
CONTROL	5	S	0.00000	7	14	Y	6	6	3	0	0	0	7	6
CONTROL	5	S	0.00000	8	15	Y	3	10	0	0	0	0	3	10
CONTROL	5	S	0.00000	8	16	N	0	0	0	0	0	0	0	0
CONTROL	5	S	0.00000	9	17	Y	7	6	1	0	1	1	7	6
CONTROL	5	S	0.00000	9	18	Y	5	9	0	0	0	0	5	10
CONTROL	5	S	0.00000	10	19	Y	8	5	0	0	2	1	8	6
CONTROL	5	S	0.00000	10	20	Y	6	7	0	0	0	0	6	7
71-68	5	S	.20000	21	41	Y	10	4	2	0	1	0	10	4
71-68	5	S	.20000	21	42	Y	13	2	1	0	0	0	13	2
71-68	5	S	.20000	22	43	Y	2	7	0	0	0	0	7	9
71-68	5	S	.20000	22	44	Y	8	6	0	0	0	0	8	7
71-68	5	S	.20000	23	45	Y	6	7	0	1	0	1	7	8
71-68	5	S	.20000	23	46	Y	5	9	0	0	0	0	5	11
71-68	5	S	.20000	24	47	Y	5	8	0	0	0	0	5	8
71-68	5	S	.20000	24	48	Y	6	7	0	1	0	0	7	7
71-68	5	S	.20000	25	49	Y	7	7	0	0	1	0	7	7
71-68	5	S	.20000	25	50	Y	3	7	0	0	2	2	3	9
71-68	5	S	.20000	26	51	N	0	0	0	0	0	0	0	0
71-68	5	S	.20000	26	52	Y	0	1	0	1	0	0	3	6
71-68	5	S	.20000	27	53	N	0	0	0	0	0	0	0	0
71-68	5	S	.20000	27	54	Y	5	9	0	1	1	0	6	10
71-68	5	S	.20000	28	55	Y	8	7	0	0	0	1	8	7
71-68	5	S	.20000	28	56	N	0	0	0	0	0	0	0	0
71-68	5	S	.20000	29	57	Y	6	7	0	0	0	0	6	7
71-68	5	S	.20000	29	58	Y	6	8	1	0	0	0	7	7
71-68	5	S	.20000	30	59	Y	6	8	0	0	0	0	6	8
71-68	5	S	.20000	30	60	Y	4	8	0	0	0	0	5	8

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

PAGE 22

TEST MATERIAL	WEEK	S/M DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS	EARLY DEATHS		LATE DEATHS		CORPORA LUTEA		
							L	R	L	R	L	R	
71-68	5	S 1.00000	31	61	Y	7	5	0	1	0	1	7	6
71-68	5	S 1.00000	31	62	Y	5	7	1	1	0	0	6	7
71-68	5	S 1.00000	32	63	Y	5	7	1	0	0	0	7	7
71-68	5	S 1.00000	32	64	Y	5	6	2	0	0	0	6	6
71-68	5	S 1.00000	33	65	Y	4	8	0	0	0	0	5	8
71-68	5	S 1.00000	33	66	Y	5	6	1	2	1	2	7	7
71-68	5	S 1.00000	34	67	Y	3	6	0	0	0	0	3	7
71-68	5	S 1.00000	34	68	Y	6	6	1	0	0	0	7	6
71-68	5	S 1.00000	35	69	Y	6	4	1	0	0	0	6	7
71-68	5	S 1.00000	35	70	Y	4	5	0	0	0	0	6	5
71-68	5	S 1.00000	36	71	Y	2	7	1	0	0	0	3	7
71-68	5	S 1.00000	36	72	Y	0	7	0	0	0	1	5	9
71-68	5	S 1.00000	37	73	Y	6	6	1	1	0	0	6	6
71-68	5	S 1.00000	37	74	Y	2	11	0	0	1	0	2	11
71-68	5	S 1.00000	38	75	Y	4	9	1	0	0	0	4	10
71-68	5	S 1.00000	38	76	Y	7	6	0	0	0	0	7	6
71-68	5	S 1.00000	39	77	Y	4	10	0	0	0	0	4	10
71-68	5	S 1.00000	39	78	Y	6	8	0	0	0	0	6	8
71-68	5	S 1.00000	40	79	Y	1	9	0	0	0	0	1	13
71-68	5	S 1.00000	40	80	Y	9	5	0	0	0	0	9	5
71-68	5	S 5.00000	41	81	Y	3	8	0	0	0	1	4	10
71-68	5	S 5.00000	41	82	Y	0	4	0	0	0	0	10	4
71-68	5	S 5.00000	42	83	Y	3	11	0	0	1	1	3	11
71-68	5	S 5.00000	42	84	Y	7	7	0	1	0	0	8	7
71-68	5	S 5.00000	43	85	Y	7	6	0	0	0	0	7	6
71-68	5	S 5.00000	43	86	Y	4	7	0	0	1	1	4	7
71-68	5	S 5.00000	44	87	Y	7	5	0	0	0	1	7	5
71-68	5	S 5.00000	44	88	Y	5	5	0	0	1	0	5	5
71-68	5	S 5.00000	45	89	Y	7	3	0	0	1	0	7	3
71-68	5	S 5.00000	45	90	Y	5	8	0	0	0	0	6	8
71-68	5	S 5.00000	46	91	Y	4	9	0	1	0	0	4	9
71-68	5	S 5.00000	46	92	Y	8	5	0	0	1	0	9	5
71-68	5	S 5.00000	47	93	Y	2	8	0	1	0	0	2	9
71-68	5	S 5.00000	47	94	Y	4	9	0	0	0	0	6	11
71-68	5	S 5.00000	48	95	Y	7	6	0	0	1	1	8	6
71-68	5	S 5.00000	48	96	Y	5	7	0	0	1	1	7	7
71-68	5	S 5.00000	49	97	Y	5	9	1	0	0	0	5	10
71-68	5	S 5.00000	49	98	Y	5	10	0	0	0	0	5	10
71-68	5	S 5.00000	50	99	Y	6	6	0	0	0	0	7	6
71-68	5	S 5.00000	50	100	Y	7	7	1	0	0	0	7	7

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	F. NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R	L	R
TEM	5	S	.00020	11	21	Y	9	4	6	2	0	0	9	5
TEM	5	S	.00020	11	22	YY	4	8	2	6	0	0	5	9
TEM	5	S	.00020	12	23	YY	4	4	1	3	0	0	7	6
TEM	5	S	.00020	12	24	YY	1	0	0	0	0	0	5	7
TEM	5	S	.00020	13	25	YY	6	4	5	3	1	0	6	5
TEM	5	S	.00020	13	26	YY	7	6	7	6	0	0	7	6
TEM	5	S	.00020	14	27	YY	4	9	2	4	2	5	4	10
TEM	5	S	.00020	14	28	YY	0	6	0	6	0	0	10	10
TEM	5	S	.00020	15	29	YY	7	6	3	3	0	0	7	6
TEM	5	S	.00020	15	30	YY	6	2	2	1	1	0	8	4
TEM	5	S	.00020	16	31	YY	7	5	5	3	0	0	8	6
TEM	5	S	.00020	16	32	YY	8	6	8	5	0	1	6	10
TEM	5	S	.00020	17	33	YY	4	10	4	9	0	0	0	0
TEM	5	S	.00020	17	34	N	0	0	0	0	0	0	0	0
TEM	5	S	.00020	18	35	YY	4	7	4	7	0	0	5	7
TEM	5	S	.00020	18	36	YY	5	5	3	4	0	0	7	7
TEM	5	S	.00020	19	37	YY	3	1	3	1	0	0	8	6
TEM	5	S	.00020	19	38	YY	4	7	4	7	0	0	5	11
TEM	5	S	.00020	19	39	YY	3	8	2	8	0	0	5	10
TEM	5	S	.00020	20	39	YY	5	7	5	7	0	0	5	7
TEM	5	S	.00020	20	40	Y								
CONTROL	5	M	0.00000	1	1	Y	6	8	0	0	1	0	8	8
CONTROL	5	M	0.00000	1	2	YY	3	8	0	0	0	0	3	8
CONTROL	5	M	0.00000	2	3	YY	7	4	0	0	0	0	7	4
CONTROL	5	M	0.00000	2	4	YY	6	7	0	0	1	1	8	7
CONTROL	5	M	0.00000	3	5	YY	6	9	0	0	1	1	6	11
CONTROL	5	M	0.00000	3	6	YY	8	8	0	0	0	0	8	8
CONTROL	5	M	0.00000	4	7	YY	5	10	0	0	0	0	5	10
CONTROL	5	M	0.00000	4	8	YY	5	6	0	0	2	0	5	8
CONTROL	5	M	0.00000	5	9	N	0	0	0	0	0	0	0	0
CONTROL	5	M	0.00000	5	10	YY	5	8	0	0	0	0	5	8
CONTROL	5	M	0.00000	6	11	YY	8	3	0	0	0	0	8	3
CONTROL	5	M	0.00000	6	12	YY	0	7	0	0	0	0	7	9
CONTROL	5	M	0.00000	7	13	YY	6	7	0	1	0	0	6	8
CONTROL	5	M	0.00000	7	14	YY	0	9	0	0	0	0	4	9
CONTROL	5	M	0.00000	8	15	YY	7	8	0	3	0	0	8	8
CONTROL	5	M	0.00000	8	16	YY	10	3	2	0	0	0	10	4
CONTROL	5	M	0.00000	9	17	YY	4	6	0	0	0	0	4	6
CONTROL	5	M	0.00000	9	18	YY	6	7	1	0	0	0	6	7
CONTROL	5	M	0.00000	10	19	YY	3	10	0	1	0	0	4	10
CONTROL	5	M	0.00000	10	20	Y	8	3	0	0	1	0	9	3

TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEMA NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R	L	R
71-68	5	M	.20000	11	21	Y	6	5	0	0	0	0	7	5
71-68	5	M	.20000	11	22	YY	6	6	1	0	1	0	6	10
71-68	5	M	.20000	12	23	YY	7	6	0	0	2	0	7	6
71-68	5	M	.20000	12	24	YY	6	7	0	0	0	0	7	8
71-68	5	M	.20000	13	25	YY	7	5	0	0	0	0	9	7
71-68	5	M	.20000	13	26	YY	6	5	0	0	0	1	6	6
71-68	5	M	.20000	14	27	YY	8	4	1	0	0	0	9	4
71-68	5	M	.20000	14	28	YY	7	6	0	0	0	0	9	6
71-68	5	M	.20000	15	29	YY	7	5	0	0	0	0	7	5
71-68	5	M	.20000	15	30	YY	2	8	0	0	1	1	3	8
71-68	5	M	.20000	16	31	YY	7	4	0	0	0	0	8	5
71-68	5	M	.20000	16	32	YY	6	7	0	0	0	0	6	9
71-68	5	M	.20000	17	33	YY	5	7	0	0	0	0	6	7
71-68	5	M	.20000	17	34	YY	4	7	1	3	0	0	4	7
71-68	5	M	.20000	18	35	YY	6	9	0	1	0	0	6	9
71-68	5	M	.20000	18	36	YY	0	6	0	0	0	0	8	7
71-68	5	M	.20000	19	37	YY	8	5	0	0	0	0	8	5
71-68	5	M	.20000	19	38	YY	5	9	0	0	0	1	5	9
71-68	5	M	.20000	20	39	YY	5	8	0	0	1	0	5	9
71-68	5	M	.20000	20	40	Y	8	7	1	0	0	0	8	7
71-68	5	M	1.00000	21	41	Y	3	9	0	0	1	0	3	9
71-68	5	M	1.00000	21	42	YY	8	6	1	1	0	0	12	9
71-68	5	M	1.00000	22	43	YY	7	6	0	0	0	0	9	6
71-68	5	M	1.00000	22	44	YY	4	8	0	1	0	1	6	9
71-68	5	M	1.00000	23	45	YY	6	7	0	0	1	0	7	7
71-68	5	M	1.00000	23	46	YY	3	10	0	0	0	2	3	10
71-68	5	M	1.00000	24	47	YY	7	7	0	1	0	0	7	7
71-68	5	M	1.00000	24	48	YY	7	7	0	0	0	0	8	8
71-68	5	M	1.00000	25	49	YY	4	11	0	0	0	0	5	11
71-68	5	M	1.00000	25	50	YY	5	8	2	1	0	0	5	8
71-68	5	M	1.00000	26	51	YY	6	9	0	0	0	0	6	9
71-68	5	M	1.00000	26	52	YY	8	2	0	1	0	0	9	2
71-68	5	M	1.00000	27	53	YY	7	8	0	0	0	0	8	9
71-68	5	M	1.00000	27	54	YY	7	7	0	0	0	1	7	7
71-68	5	M	1.00000	28	55	YY	6	8	0	0	0	0	7	8
71-68	5	M	1.00000	28	56	YY	8	6	1	0	0	0	8	6
71-68	5	M	1.00000	29	57	YY	7	6	0	0	0	0	9	6
71-68	5	M	1.00000	29	58	YY	4	7	1	1	0	0	4	8
71-68	5	M	1.00000	30	59	YY	5	3	0	0	0	1	7	4
71-68	5	M	1.00000	30	60	Y	3	9	0	0	0	0	3	9

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

PAGE 25

TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FE NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R	L	R
71-68	5	M	5.00000	31	61	Y	4	3	0	0	0	1	6	5
71-68	5	M	5.00000	31	62	Y	7	6	3	1	0	0	7	6
71-68	5	M	5.00000	32	63	Y	6	5	0	0	0	0	6	5
71-68	5	M	5.00000	32	64	Y	7	6	0	0	0	0	8	6
71-68	5	M	5.00000	33	65	Y	4	6	0	1	2	2	4	7
71-68	5	M	5.00000	33	66	Y	4	6	0	0	0	0	5	7
71-68	5	M	5.00000	34	67	Y	6	6	0	0	0	0	6	6
71-68	5	M	5.00000	34	68	Y	4	9	0	0	0	0	4	9
71-68	5	M	5.00000	35	69	Y	4	8	0	0	0	0	4	8
71-68	5	M	5.00000	35	70	Y	3	11	0	1	1	3	3	11
71-68	5	M	5.00000	36	71	Y	6	7	0	0	0	1	6	8
71-68	5	M	5.00000	36	72	Y	5	7	0	1	0	0	5	8
71-68	5	M	5.00000	37	73	Y	4	8	0	1	0	0	5	8
71-68	5	M	5.00000	37	74	Y	3	10	0	0	0	4	3	10
71-68	5	M	5.00000	38	75	Y	4	7	0	0	0	0	4	7
71-68	5	M	5.00000	38	76	Y	9	4	0	0	0	0	10	4
71-68	5	M	5.00000	39	77	Y	7	7	1	0	0	0	7	7
71-68	5	M	5.00000	39	78	Y	12	1	0	0	1	0	13	1
71-68	5	M	5.00000	40	79	Y	5	5	0	0	0	0	6	6
71-68	5	M	5.00000	40	80	Y	8	2	0	0	0	0	9	2

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

PAGE 26

TEST MATERIAL	WEEK	S/M DOSE	MALE NO.	FE NO.	PREG.	IMPLANTS	EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R
CONTROL	6	S 0.00000	1	1	Y	6	8	0	0	2	1	6 8
CONTROL	6	S 0.00000	1	2	YY	8	5	0	0	1	1	8 6
CONTROL	6	S 0.00000	2	3	YY	3	3	1	0	0	0	5 5
CONTROL	6	S 0.00000	2	4	YY	5	7	2	4	0	0	5 7
CONTROL	6	S 0.00000	3	5	YY	5	6	0	1	0	0	6 6
CONTROL	6	S 0.00000	3	6	YY	4	9	0	1	0	0	5 9
CONTROL	6	S 0.00000	4	7	YY	8	7	1	1	0	0	8 8
CONTROL	6	S 0.00000	4	8	YY	2	7	0	0	0	0	5 8
CONTROL	6	S 0.00000	5	9	YY	7	5	0	0	0	0	7 5
CONTROL	6	S 0.00000	5	10	YY	1	5	1	0	0	0	7 5
CONTROL	6	S 0.00000	6	11	YY	5	6	0	0	0	0	5 7
CONTROL	6	S 0.00000	6	12	YY	4	5	0	0	0	0	8 4
CONTROL	6	S 0.00000	7	13	YY	8	4	0	0	0	0	6 9
CONTROL	6	S 0.00000	7	14	YY	6	8	1	C	0	0	7 7
CONTROL	6	S 0.00000	8	15	YY	7	7	0	0	1	3	7 7
CONTROL	6	S 0.00000	8	16	YY	4	6	0	0	0	0	5 6
CONTROL	6	S 0.00000	9	17	YY	5	5	0	0	0	0	5 7
CONTROL	6	S 0.00000	9	18	YY	5	6	0	0	1	0	6 6
CONTROL	6	S 0.00000	10	19	YY	8	6	2	1	0	0	8 10
CONTROL	6	S 0.00000	10	20	Y	7	5	0	0	0	0	7 5
71-68	6	S .20000	21	41	Y	6	6	0	0	0	0	6 6
71-68	6	S .20000	21	42	YY	6	4	0	0	1	1	8 5
71-68	6	S .20000	22	43	YY	4	7	0	2	0	0	5 7
71-68	6	S .20000	22	44	YY	5	8	0	0	0	0	6 8
71-68	6	S .20000	23	45	YY	5	4	1	2	0	0	5 5
71-68	6	S .20000	23	46	YY	5	2	0	0	0	0	6 6
71-68	6	S .20000	24	47	YY	5	7	0	0	0	0	5 10
71-68	6	S .20000	24	48	YY	7	7	0	0	1	1	7 7
71-68	6	S .20000	25	49	YY	8	5	2	0	0	0	8 5
71-68	6	S .20000	25	50	YY	4	8	1	0	0	0	4 8
71-68	6	S .20000	26	51	YY	6	3	0	1	0	0	11 5
71-68	6	S .20000	26	52	YY	3	8	0	0	0	0	3 9
71-68	6	S .20000	27	53	YY	4	7	0	0	0	0	5 7
71-68	6	S .20000	27	54	YY	7	7	0	0	0	0	7 7
71-68	6	S .20000	28	55	YY	7	5	0	0	0	1	7 5
71-68	6	S .20000	28	56	YY	4	8	0	0	0	0	4 8
71-68	6	S .20000	29	57	YY	9	4	0	0	0	0	10 4
71-68	6	S .20000	29	58	YY	4	7	0	0	0	0	5 7
71-68	6	S .20000	30	59	YY	3	10	0	0	1	1	3 11
71-68	6	S .20000	30	60	Y	5	7	0	0	0	2	5 7

TEST MATERIAL	WEEK	S/M DOSE	MALE NO.	FEM. NO.	PREG.	IMPLANTS L R	EARLY DEATHS L R		LATE DEATHS L R		CORPORA LUTEA L R	
							L	R	L	R	L	R
71-68	6	S 1.00000	31	61	Y	5 8	0	0	1	1	5	10
71-68	6	S 1.00000	31	62	Y	4 8	0	0	0	0	5	8
71-68	6	S 1.00000	32	63	Y	5 5	1	0	0	1	7	7
71-68	6	S 1.00000	32	64	Y	8 3	2	0	0	0	9	3
71-68	6	S 1.00000	33	65	Y	6 3	0	0	0	0	8	3
71-68	6	S 1.00000	33	66	Y	4 5	0	1	0	0	6	7
71-68	6	S 1.00000	34	67	Y	4 8	0	0	0	0	4	12
71-68	6	S 1.00000	34	68	Y	3 1	0	0	0	0	4	6
71-68	6	S 1.00000	35	69	Y	5 6	1	0	0	0	5	7
71-68	6	S 1.00000	35	70	Y	6 6	0	0	0	0	6	6
71-68	6	S 1.00000	36	71	Y	8 6	2	1	0	0	9	5
71-68	6	S 1.00000	36	72	Y	8 4	0	0	0	0	5	8
71-68	6	S 1.00000	37	73	Y	5 8	0	0	0	0	4	9
71-68	6	S 1.00000	37	74	Y	3 9	0	0	0	0	9	7
71-68	6	S 1.00000	38	75	Y	9 7	1	0	0	1	7	5
71-68	6	S 1.00000	38	76	Y	7 5	0	0	0	0	8	5
71-68	6	S 1.00000	39	77	Y	8 5	0	0	0	0	2	10
71-68	6	S 1.00000	39	78	Y	2 10	0	0	0	0	2	9
71-68	6	S 1.00000	40	79	Y	2 8	0	0	0	0	4	11
71-68	6	S 1.00000	40	80	Y	4 10	0	0	0	0	7	3
71-68	6	S 5.00000	41	81	Y	7 3	0	0	1	1	7	5
71-68	6	S 5.00000	41	82	Y	7 5	0	0	0	0	7	6
71-68	6	S 5.00000	42	83	Y	7 6	0	0	0	0	7	8
71-68	6	S 5.00000	42	84	Y	3 8	1	0	0	0	3	4
71-68	6	S 5.00000	43	85	Y	6 2	0	1	0	0	7	4
71-68	6	S 5.00000	43	86	Y	6 6	0	0	0	0	6	6
71-68	6	S 5.00000	44	87	Y	6 5	0	0	0	0	6	6
71-68	6	S 5.00000	44	88	Y	7 3	0	0	0	0	8	4
71-68	6	S 5.00000	45	89	Y	6 5	0	0	0	0	6	5
71-68	6	S 5.00000	45	90	Y	4 10	0	0	0	0	4	10
71-68	6	S 5.00000	46	91	Y	6 8	0	0	0	0	6	8
71-68	6	S 5.00000	46	92	Y	7 4	0	0	0	0	7	5
71-68	6	S 5.00000	47	93	Y	6 8	0	0	1	0	5	9
71-68	6	S 5.00000	47	94	Y	5 8	0	0	0	0	0	0
71-68	6	S 5.00000	48	95	N	0 0	0	0	1	1	4	8
71-68	6	S 5.00000	48	96	Y	4 8	0	0	0	0	7	8
71-68	6	S 5.00000	49	97	Y	7 5	0	1	1	1	7	7
71-68	6	S 5.00000	49	98	Y	0 4	0	0	0	2	6	6
71-68	6	S 5.00000	50	99	Y	9 6	1	0	0	0	9	6
71-68	6	S 5.00000	50	100	N	0 0	0	0	0	0	0	0

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS	EARLY DEATHS		LATE DEATHS		CORPORAL UTEA		
								L	R	L	R	L	R	
TEM	6	S	.00020	11	21	Y	5	6	2	0	0	0	5	6
TEM	6	S	.00020	11	22	Y	6	6	0	0	0	0	7	7
TEM	6	S	.00020	12	23	Y	7	6	4	2	0	0	7	6
TEM	6	S	.00020	12	24	Y	9	5	0	0	0	0	10	5
TEM	6	S	.00020	13	25	Y	9	5	3	1	1	0	9	5
TEM	6	S	.00020	13	26	Y	7	6	1	1	1	1	7	6
TEM	6	S	.00020	14	27	Y	1	3	1	0	0	0	5	7
TEM	6	S	.00020	14	28	Y	10	5	0	0	0	0	10	5
TEM	6	S	.00020	15	29	Y	2	11	0	0	0	0	5	11
TEM	6	S	.00020	15	30	Y	6	6	0	0	3	3	7	6
TEM	6	S	.00020	16	31	Y	7	7	0	0	0	0	7	7
TEM	6	S	.00020	16	32	Y	6	6	1	2	0	0	6	6
TEM	6	S	.00020	17	33	Y	5	9	0	0	1	1	5	9
TEM	6	S	.00020	17	34	Y	6	7	0	1	0	0	6	7
TEM	6	S	.00020	18	35	Y	6	5	0	0	0	0	7	5
TEM	6	S	.00020	18	36	Y	5	7	0	0	0	1	5	7
TEM	6	S	.00020	19	37	Y	6	5	1	1	0	0	7	6
TEM	6	S	.00020	19	38	Y	7	7	0	2	7	5	8	7
TEM	6	S	.00020	20	39	YY	5	8	1	0	0	0	5	8
TEM	6	S	.00020	20	40	Y	5	6	0	1	0	0	5	8
CONTROL	6	M	0.00000	1	1	Y	8	5	0	0	0	0	8	6
CONTROL	6	M	0.00000	1	2	YY	7	3	0	0	2	0	8	3
CONTROL	6	M	0.00000	2	3	YY	0	2	0	0	0	0	8	3
CONTROL	6	M	0.00000	2	4	YY	8	6	0	0	0	1	8	6
CONTROL	6	M	0.00000	3	5	YY	8	4	0	0	0	0	8	4
CONTROL	6	M	0.00000	3	6	YY	8	6	0	0	0	0	8	6
CONTROL	6	M	0.00000	4	7	YY	6	0	0	0	1	0	6	3
CONTROL	6	M	0.00000	4	8	YY	7	8	1	0	0	0	7	8
CONTROL	6	M	0.00000	5	9	YY	5	6	0	1	0	0	6	9
CONTROL	6	M	0.00000	5	10	YY	6	7	0	0	0	0	6	7
CONTROL	6	M	0.00000	6	11	YY	9	3	0	0	3	1	9	4
CONTROL	6	M	0.00000	6	12	YY	3	8	0	1	0	1	4	9
CONTROL	6	M	0.00000	7	13	YY	2	8	0	0	0	0	8	6
CONTROL	6	M	0.00000	7	14	YY	8	4	0	0	0	0	4	6
CONTROL	6	M	0.00000	8	15	YY	4	6	1	0	0	0	8	7
CONTROL	6	M	0.00000	8	16	YY	7	7	0	1	0	0	8	7
CONTROL	6	M	0.00000	9	17	YY	9	3	1	0	0	0	10	3
CONTROL	6	M	0.00000	9	18	YY	8	2	0	0	0	0	10	2
CONTROL	6	M	0.00000	10	19	YY	5	6	0	0	0	0	5	6
CONTROL	6	M	0.00000	10	20	Y	6	6	0	0	0	0	7	6

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEM NO.	PREG.	IMPLANTS	EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
								L	R	L	R	L	R
71-68	6	M	.20000	11	21	Y	3	9	1	1	0	0	3 11
71-68	6	M	.20000	11	22	Y	10	6	0	0	0	0	11 7
71-68	6	M	.20000	12	23	Y	8	3	1	1	0	0	13 8
71-68	6	M	.20000	12	24	Y	11	4	1	1	0	0	11 5
71-68	6	M	.20000	13	25	Y	6	7	0	0	0	0	6 8
71-68	6	M	.20000	13	26	Y	7	5	0	1	0	0	9 6
71-68	6	M	.20000	14	27	Y	5	6	0	0	0	0	7 7
71-68	6	M	.20000	14	28	Y	3	8	1	0	0	1	8 8
71-68	6	M	.20000	15	29	Y	5	10	0	0	0	2	5 10
71-68	6	M	.20000	15	30	Y	7	6	0	0	0	0	7 6
71-68	6	M	.20000	16	31	Y	4	6	0	0	0	1	5 6
71-68	6	M	.20000	16	32	Y	4	10	0	1	0	0	5 10
71-68	6	M	.20000	17	33	Y	7	5	0	0	0	1	7 5
71-68	6	M	.20000	17	34	Y	7	6	1	0	0	0	7 6
71-68	6	M	.20000	18	35	Y	1	6	0	0	0	0	6 7
71-68	6	M	.20000	18	36	Y	7	3	2	1	0	0	4 6
71-68	6	M	.20000	19	37	Y	3	6	0	0	0	1	8 5
71-68	6	M	.20000	19	38	Y	6	5	2	2	1	0	8 8
71-68	6	M	.20000	20	39	Y	8	8	1	0	0	0	6 10
71-68	6	M	.20000	20	40	Y	0	1	0	0	0	0	6 10
71-68	6	M	1.00000	21	41	Y	6	8	0	0	0	0	6 8
71-68	6	M	1.00000	21	42	Y	6	7	0	1	0	0	7 7
71-68	6	M	1.00000	22	43	Y	4	9	0	0	0	0	4 9
71-68	6	M	1.00000	22	44	Y	10	2	0	0	0	1	10 2
71-68	6	M	1.00000	23	45	Y	5	7	0	1	1	0	5 7
71-68	6	M	1.00000	23	46	Y	4	8	0	1	0	0	6 9
71-68	6	M	1.00000	24	47	Y	2	5	1	1	0	0	4 5
71-68	6	M	1.00000	24	48	Y	8	5	1	0	1	0	8 5
71-68	6	M	1.00000	25	49	Y	5	5	0	0	0	0	7 7
71-68	6	M	1.00000	25	50	Y	5	6	1	0	0	0	5 6
71-68	6	M	1.00000	26	51	Y	4	9	1	0	0	0	4 9
71-68	6	M	1.00000	26	52	Y	11	2	0	0	0	0	12 2
71-68	6	M	1.00000	27	53	Y	8	4	1	0	0	0	10 4
71-68	6	M	1.00000	27	54	Y	4	8	0	1	0	0	4 8
71-68	6	M	1.00000	28	55	Y	8	4	0	0	0	0	9 5
71-68	6	M	1.00000	28	56	Y	10	4	0	0	2	1	10 5
71-68	6	M	1.00000	29	57	Y	4	4	0	0	1	0	6 7
71-68	6	M	1.00000	29	58	Y	1	2	0	0	0	0	9 7
71-68	6	M	1.00000	30	59	Y	8	7	0	0	0	0	9 7
71-68	6	M	1.00000	30	60	Y	7	4	0	0	0	0	7 6

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEM. NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA		
							L	R	L	R	L	R	L	R	
71-68	6	M	5.00000	31	61	Y	6	7	0	2	0	0	6	8	
71-68	6	M	5.00000	31	62	Y	7	6	0	0	4	2	7	6	
71-68	6	M	5.00000	32	63	Y	5	6	0	0	0	0	6	7	
71-68	6	M	5.00000	32	64	Y	5	9	0	0	0	0	5	9	
71-68	6	M	5.00000	33	65	Y	10	4	0	0	0	0	10	4	
71-68	6	M	5.00000	33	66	N	0	0	0	0	0	0	0	0	
71-68	6	M	5.00000	34	67	Y	6	8	0	1	2	2	6	8	
71-68	6	M	5.00000	34	68	Y	7	5	0	0	0	0	8	5	
71-68	6	M	5.00000	35	69	Y	7	7	0	0	0	0	7	9	
71-68	6	M	5.00000	35	70	Y	6	11	0	0	0	1	6	11	
71-68	6	M	5.00000	36	71	Y	5	7	0	0	0	0	5	7	
71-68	6	M	5.00000	36	72	Y	5	8	0	1	0	0	5	8	
71-68	6	M	5.00000	37	73	Y	0	4	0	0	0	0	6	7	
71-68	6	M	5.00000	37	74	Y	7	6	0	0	0	0	8	6	
71-68	6	M	5.00000	38	75	Y	5	8	0	0	0	0	5	9	
71-68	6	M	5.00000	38	76	Y	8	5	1	1	0	0	8	5	
71-68	6	M	5.00000	39	77	Y	5	7	0	0	0	0	5	7	
71-68	6	M	5.00000	39	78	Y	5	8	1	0	0	0	5	8	
71-68	6	M	5.00000	40	79	Y	6	5	0	1	0	0	6	5	
71-68	6	M	5.00000	40	80	Y	10	5	0	0	0	0	10	5	

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## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R	L	R
CONTROL	7	S	0.00000	1	1	Y	7	5	0	0	0	0	8	8
CONTROL	7	S	0.00000	1	2	YY	5	3	0	0	0	0	6	5
CONTROL	7	S	0.00000	2	3	YY	6	6	0	0	0	0	6	6
CONTROL	7	S	0.00000	2	4	YY	2	4	0	0	1	0	5	9
CONTROL	7	S	0.00000	3	5	YY	5	5	0	0	0	0	6	6
CONTROL	7	S	0.00000	3	6	YY	0	1	0	0	0	0	2	7
CONTROL	7	S	0.00000	4	7	YY	4	9	4	9	0	0	4	9
CONTROL	7	S	0.00000	4	8	YY	2	7	0	0	0	0	2	9
CONTROL	7	S	0.00000	5	9	YY	4	6	0	0	1	1	4	8
CONTROL	7	S	0.00000	5	10	YY	10	3	0	0	0	0	10	3
CONTROL	7	S	0.00000	6	11	YY	0	2	0	0	0	0	2	4
CONTROL	7	S	0.00000	6	12	YY	6	5	0	0	1	2	6	5
CONTROL	7	S	0.00000	7	13	YY	6	5	0	1	0	0	8	5
CONTROL	7	S	0.00000	7	14	NY	0	0	0	0	0	0	0	0
CONTROL	7	S	0.00000	8	15	YY	5	8	0	0	0	0	5	8
CONTROL	7	S	0.00000	8	16	YY	4	8	1	0	0	0	9	4
CONTROL	7	S	0.00000	9	17	YY	9	4	0	0	0	0	9	4
CONTROL	7	S	0.00000	9	18	YY	5	6	1	0	0	0	5	6
CONTROL	7	S	0.00000	10	19	YY	5	8	0	0	1	0	6	8
CONTROL	7	S	0.00000	10	20	YY	7	8	0	0	1	0	7	8
71-68	7	S	.20000	21	41	YY	10	3	0	0	3	0	10	4
71-68	7	S	.20000	21	42	YY	7	7	0	0	0	0	7	8
71-68	7	S	.20000	22	43	YY	7	3	0	0	0	0	7	6
71-68	7	S	.20000	22	44	YY	5	5	0	0	0	0	5	5
71-68	7	S	.20000	23	45	YY	6	6	0	0	0	0	6	6
71-68	7	S	.20000	23	46	YY	6	6	0	0	0	0	6	7
71-68	7	S	.20000	24	47	YY	5	9	0	0	0	0	6	9
71-68	7	S	.20000	24	48	YY	6	8	0	1	0	0	6	9
71-68	7	S	.20000	25	49	YY	5	5	0	0	0	0	5	5
71-68	7	S	.20000	25	50	YY	8	4	0	0	2	1	8	5
71-68	7	S	.20000	26	51	YY	4	5	0	0	4	4	4	7
71-68	7	S	.20000	26	52	YY	9	7	0	0	0	0	11	7
71-68	7	S	.20000	27	53	YY	4	7	0	0	0	0	4	7
71-68	7	S	.20000	27	54	YY	4	7	0	0	0	0	5	9
71-68	7	S	.20000	28	55	YY	8	3	0	0	0	1	9	3
71-68	7	S	.20000	28	56	YY	5	6	0	0	0	0	9	6
71-68	7	S	.20000	29	57	YY	6	6	0	0	0	0	9	6
71-68	7	S	.20000	29	58	YY	4	6	0	0	0	0	7	8
71-68	7	S	.20000	30	59	YY	4	7	0	0	0	0	7	8
71-68	7	S	.20000	30	60	YY	4	8	0	0	0	0	5	8

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TEST MATERIAL	WEEK	S/M DOSE	MALE NO.	FEM. NO.	PREG.	IMPLANTS	EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R
71-68	7	S 1.00000	31	61	Y	9	4	0	0	2	0	9 6
71-68	7	S 1.00000	31	62	Y	7	5	0	0	1	0	8 5
71-68	7	S 1.00000	32	63	Y	6	8	1	2	1	0	6 8
71-68	7	S 1.00000	32	64	Y	5	7	0	1	1	0	5 7
71-68	7	S 1.00000	33	65	Y	2	10	0	0	0	0	2 11
71-68	7	S 1.00000	33	66	Y	9	4	0	0	0	0	9 5
71-68	7	S 1.00000	34	67	Y	2	6	0	0	0	0	5 7
71-68	7	S 1.00000	34	68	Y	2	11	0	0	0	0	2 12
71-68	7	S 1.00000	35	69	Y	9	3	1	0	0	0	10 3
71-68	7	S 1.00000	35	70	Y	5	5	0	0	0	0	5 5
71-68	7	S 1.00000	36	71	Y	3	10	0	0	0	1	3 10
71-68	7	S 1.00000	36	72	Y	5	10	0	0	0	0	5 10
71-68	7	S 1.00000	37	73	Y	5	7	0	0	0	1	7 7
71-68	7	S 1.00000	37	74	Y	10	5	0	0	2	0	10 5
71-68	7	S 1.00000	38	75	Y	5	7	0	0	0	0	8 5
71-68	7	S 1.00000	38	76	Y	8	4	0	0	0	0	6 8
71-68	7	S 1.00000	39	77	Y	6	6	0	0	1	0	3 9
71-68	7	S 1.00000	39	78	Y	3	9	0	0	0	0	5 6
71-68	7	S 1.00000	40	79	Y	5	6	0	0	1	0	8 6
71-68	7	S 1.00000	40	80	Y	8	6	0	0	0	0	8 6
71-68	7	S 5.00000	41	81	Y	6	5	0	0	0	0	6 5
71-68	7	S 5.00000	41	82	Y	5	7	0	0	0	0	5 7
71-68	7	S 5.00000	42	83	Y	10	4	0	0	0	0	10 4
71-68	7	S 5.00000	42	84	Y	10	5	0	0	0	0	10 5
71-68	7	S 5.00000	43	85	Y	6	6	0	0	0	0	6 6
71-68	7	S 5.00000	43	86	Y	6	6	0	0	0	0	8 6
71-68	7	S 5.00000	44	87	Y	10	4	0	0	0	0	10 4
71-68	7	S 5.00000	44	88	Y	4	8	0	1	0	0	5 8
71-68	7	S 5.00000	45	89	Y	6	6	0	0	0	0	6 8
71-68	7	S 5.00000	45	90	Y	4	8	0	0	0	0	4 8
71-68	7	S 5.00000	46	91	Y	4	6	0	0	0	0	6 7
71-68	7	S 5.00000	46	92	Y	7	5	0	0	0	0	8 5
71-68	7	S 5.00000	47	93	Y	5	7	0	0	0	0	5 7
71-68	7	S 5.00000	47	94	Y	8	7	0	0	0	0	8 7
71-68	7	S 5.00000	48	95	Y	4	7	0	0	2	5	4 8
71-68	7	S 5.00000	48	96	Y	6	3	0	0	1	0	12 3
71-68	7	S 5.00000	49	97	Y	8	5	0	0	1	1	8 5
71-68	7	S 5.00000	49	98	Y	8	6	0	0	1	1	9 6
71-68	7	S 5.00000	50	99	Y	10	6	0	0	1	0	10 6
71-68	7	S 5.00000	50	100	Y	6	8	0	1	0	0	6 8

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TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEMALE NO.	PREG.	IMPLANTS	EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
								L	R	L	R	L	R
TEM	7	S	.00020	11	21	Y	8	4	0	0	0	0	9 7
TEM	7	S	.00020	11	22	YY	3	9	0	0	0	0	5 10
TEM	7	S	.00020	12	23	YY	1	0	0	0	0	0	8 6
TEM	7	S	.00020	12	24	YY	6	6	1	0	0	0	6 7
TEM	7	S	.00020	13	25	YY	6	6	0	0	0	0	6 6
TEM	7	S	.00020	13	26	YY	7	6	0	0	1	0	7 6
TEM	7	S	.00020	14	27	YY	7	2	0	0	3	0	7 3
TEM	7	S	.00020	14	28	YY	7	7	0	0	0	0	7 7
TEM	7	S	.00020	15	29	YY	4	6	0	0	0	0	5 6
TEM	7	S	.00020	15	30	YY	7	5	0	0	0	0	8 7
TEM	7	S	.00020	16	31	YY	8	2	0	0	4	0	9 2
TEM	7	S	.00020	16	32	YY	7	4	1	0	0	0	8 4
TEM	7	S	.00020	17	33	YY	5	7	1	0	0	1	7 7
TEM	7	S	.00020	17	34	YY	7	5	0	0	0	0	7 5
TEM	7	S	.00020	18	35	YY	7	5	0	0	0	0	8 7
TEM	7	S	.00020	18	36	YY	7	4	0	0	1	0	12 7
TEM	7	S	.00020	19	37	YY	6	0	0	0	0	0	7 5
TEM	7	S	.00020	19	38	YY	4	5	0	0	0	0	6 5
TEM	7	S	.00020	20	39	YY	5	4	1	0	0	1	5 4
TEM	7	S	.00020	20	40	Y	4	7	0	0	1	0	7 7
CONTROL	7	M	0.00000	1	1	Y	6	7	0	0	0	0	8 7
CONTROL	7	M	0.00000	1	2	YY	4	11	0	0	0	0	4 11
CONTROL	7	M	0.00000	2	3	YY	6	6	0	0	0	0	6 6
CONTROL	7	M	0.00000	2	4	YY	2	8	0	0	0	0	2 8
CONTROL	7	M	0.00000	3	5	YY	8	6	0	0	0	1	8 7
CONTROL	7	M	0.00000	3	6	YY	6	8	0	0	1	0	6 8
CONTROL	7	M	0.00000	4	7	YY	9	6	1	0	0	0	9 7
CONTROL	7	M	0.00000	4	8	YY	6	6	0	0	0	0	7 6
CONTROL	7	M	0.00000	5	9	YY	4	7	1	2	0	0	4 7
CONTROL	7	M	0.00000	5	10	YY	9	3	0	0	0	0	12 3
CONTROL	7	M	0.00000	6	11	YY	8	6	0	0	1	0	8 7
CONTROL	7	M	0.00000	6	12	YY	3	10	0	0	0	0	4 11
CONTROL	7	M	0.00000	7	13	YY	12	1	0	0	0	0	12 1
CONTROL	7	M	0.00000	7	14	YY	8	5	0	0	0	0	8 5
CONTROL	7	M	0.00000	8	15	YY	7	7	0	0	0	1	7 7
CONTROL	7	M	0.00000	8	16	YY	7	7	0	0	1	0	7 7
CONTROL	7	M	0.00000	9	17	YY	6	9	0	1	0	0	6 11
CONTROL	7	M	0.00000	9	18	YY	5	7	0	0	0	0	6 7
CONTROL	7	M	0.00000	10	19	YY	5	9	0	0	0	0	6 9
CONTROL	7	M	0.00000	10	20	Y	9	5	0	0	0	0	9 5

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## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	LE	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R	L	R
71-68	7	M	.20000	11	21	Y	9	4	0	0	0	0	9	4
71-68	7	M	.20000	11	22	Y	3	12	0	0	0	1	3	12
71-68	7	M	.20000	12	23	Y	9	4	1	1	0	0	10	4
71-68	7	M	.20000	12	24	Y	4	1	0	0	0	0	4	7
71-68	7	M	.20000	13	25	Y	8	4	0	1	0	0	8	5
71-68	7	M	.20000	13	26	YY	5	7	0	0	0	0	5	7
71-68	7	M	.20000	14	27	Y	6	7	0	0	0	0	7	7
71-68	7	M	.20000	14	28	N	0	0	0	0	0	0	0	0
71-68	7	M	.20000	15	29	Y	4	6	0	0	0	0	4	7
71-68	7	M	.20000	15	30	Y	5	7	1	0	0	0	5	8
71-68	7	M	.20000	16	31	YY	7	5	0	0	0	0	8	5
71-68	7	M	.20000	16	32	Y	7	6	0	0	0	0	7	6
71-68	7	M	.20000	17	33	Y	6	6	0	0	0	0	6	6
71-68	7	M	.20000	17	34	Y	6	9	0	0	0	1	7	9
71-68	7	M	.20000	18	35	Y	6	7	0	0	0	0	6	8
71-68	7	M	.20000	18	36	Y	8	6	0	0	0	0	8	6
71-68	7	M	.20000	19	37	Y	8	5	0	0	0	0	8	6
71-68	7	M	.20000	19	38	Y	0	1	0	0	0	0	1	5
71-68	7	M	.20000	20	39	Y	6	8	0	1	0	0	7	9
71-68	7	M	.20000	20	40	Y	8	5	0	0	1	0	8	5
71-68	7	M	1.00000	21	41	Y	6	8	0	0	0	0	6	8
71-68	7	M	1.00000	21	42	YY	6	8	1	0	0	0	7	8
71-68	7	M	1.00000	22	43	Y	7	7	1	0	0	0	7	8
71-68	7	M	1.00000	22	44	YY	7	6	1	0	0	0	7	6
71-68	7	M	1.00000	23	45	Y	6	7	1	0	0	0	7	7
71-68	7	M	1.00000	23	46	Y	9	4	0	0	0	0	9	5
71-68	7	M	1.00000	24	47	Y	4	8	0	0	2	0	4	8
71-68	7	M	1.00000	24	48	Y	8	7	0	0	0	0	8	7
71-68	7	M	1.00000	25	49	Y	4	7	0	0	0	0	7	7
71-68	7	M	1.00000	25	50	Y	6	3	0	0	0	0	6	5
71-68	7	M	1.00000	26	51	Y	5	4	0	0	0	0	6	5
71-68	7	M	1.00000	26	52	Y	8	5	0	1	0	0	8	5
71-68	7	M	1.00000	27	53	Y	4	8	0	0	0	0	5	7
71-68	7	M	1.00000	27	54	Y	5	5	0	0	0	0	7	5
71-68	7	M	1.00000	28	55	Y	6	5	0	0	0	1	6	8
71-68	7	M	1.00000	28	56	Y	6	7	0	0	0	1	7	7
71-68	7	M	1.00000	29	57	Y	7	5	0	0	0	0	7	0
71-68	7	M	1.00000	29	58	Y	6	8	0	0	0	0	11	10
71-68	7	M	1.00000	30	59	Y	6	4	0	0	0	0	7	6
71-68	7	M	1.00000	30	60	Y	8	5	0	0	0	0	9	6

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M DOSE	MALE NO.	MALE NO.	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
						L	R	L	R	L	R	L	R
71-68	7	M 5.00000	31	61	Y	10	2	0	0	0	0	13	3
71-68	7	M 5.00000	31	62	Y	4	6	0	0	0	0	4	8
71-68	7	M 5.00000	32	63	Y	6	8	0	0	0	0	6	8
71-68	7	M 5.00000	32	64	Y	2	10	1	1	0	0	2	11
71-68	7	M 5.00000	33	65	Y	5	8	0	0	0	1	6	11
71-68	7	M 5.00000	33	66	Y	8	6	0	0	0	0	8	6
71-68	7	M 5.00000	34	67	Y	7	6	0	0	0	1	7	6
71-68	7	M 5.00000	34	68	Y	3	0	0	0	0	0	3	7
71-68	7	M 5.00000	35	69	Y	3	10	0	0	0	0	3	10
71-68	7	M 5.00000	35	70	Y	5	7	0	0	0	0	7	8
71-68	7	M 5.00000	36	71	Y	6	8	1	0	0	0	6	8
71-68	7	M 5.00000	36	72	Y	6	6	0	0	0	0	6	6
71-68	7	M 5.00000	37	73	Y	4	9	0	0	0	0	4	9
71-68	7	M 5.00000	37	74	Y	4	5	0	0	0	0	7	5
71-68	7	M 5.00000	38	75	Y	9	4	0	0	0	0	10	4
71-68	7	M 5.00000	38	76	Y	9	6	0	0	0	0	9	6
71-68	7	M 5.00000	39	77	Y	4	9	0	0	0	2	4	9
71-68	7	M 5.00000	39	78	Y	8	6	2	0	0	0	8	6
71-68	7	M 5.00000	40	79	Y	5	4	0	0	0	0	5	4
71-68	7	M 5.00000	40	80	Y	3	10	0	0	0	1	4	10

DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FE NO.	N	PREG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORAL LUTEA	
								L	R	L	R	L	R	L	R
CONTROL	8	S	0.00000	1	1		Y	5	6	0	0	0	0	6	6
CONTROL	8	S	0.00000	1	2		Y	7	9	0	0	0	0	7	9
CONTROL	8	S	0.00000	2	3		YY	0	1	0	0	0	0	3	5
CONTROL	8	S	0.00000	2	4		YY	9	5	0	0	0	0	9	5
CONTROL	8	S	0.00000	3	5		YY	9	5	0	0	0	0	9	5
CONTROL	8	S	0.00000	3	6		NY	0	0	0	0	0	0	0	0
CONTROL	8	S	0.00000	4	7		Y	8	3	0	0	0	0	8	3
CONTROL	8	S	0.00000	4	8		NY	0	0	0	0	0	0	0	0
CONTROL	8	S	0.00000	5	9		YY	7	8	0	0	0	0	6	8
CONTROL	8	S	0.00000	5	10		YY	6	8	0	0	1	0	8	6
CONTROL	8	S	0.00000	6	11		YY	8	6	0	0	0	0	6	6
CONTROL	8	S	0.00000	6	12		YY	2	0	0	0	0	0	7	7
CONTROL	8	S	0.00000	7	13		YY	6	7	0	0	2	0	3	9
CONTROL	8	S	0.00000	7	14		YY	3	8	0	0	0	0	5	7
CONTROL	8	S	0.00000	8	15		YY	5	7	0	0	0	0	5	7
CONTROL	8	S	0.00000	8	16		YY	7	7	0	0	0	0	8	5
CONTROL	8	S	0.00000	9	17		YY	6	5	0	0	0	0	6	6
CONTROL	8	S	0.00000	9	18		YY	6	6	0	0	2	0	0	0
CONTROL	8	S	0.00000	10	19		NY	0	0	0	0	0	0	10	5
CONTROL	8	S	0.00000	10	20		Y	10	5	0	0	0	0		
71-68	8	S	.20000	21	41		Y	8	4	0	0	0	0	8	4
71-68	8	S	.20000	21	42		YY	5	7	0	0	1	0	5	7
71-68	8	S	.20000	22	43		YY	3	9	1	0	0	0	3	11
71-68	8	S	.20000	22	44		YY	8	4	1	0	0	0	8	4
71-68	8	S	.20000	23	45		YY	6	7	0	0	1	2	6	7
71-68	8	S	.20000	23	46		YY	8	7	0	0	1	1	8	7
71-68	8	S	.20000	24	47		YY	4	8	0	1	0	0	4	8
71-68	8	S	.20000	24	48		YY	7	5	1	1	0	0	7	6
71-68	8	S	.20000	25	49		YY	3	8	0	0	1	0	3	8
71-68	8	S	.20000	25	50		YY	6	7	1	0	0	0	6	7
71-68	8	S	.20000	26	51		YY	4	7	1	0	0	0	4	8
71-68	8	S	.20000	26	52		YY	9	5	0	0	1	0	9	5
71-68	8	S	.20000	27	53		YY	3	7	0	0	0	0	3	10
71-68	8	S	.20000	27	54		YY	7	8	0	0	0	0	7	8
71-68	8	S	.20000	28	55		YY	7	7	0	0	0	1	7	7
71-68	8	S	.20000	28	56		YY	5	7	0	0	1	0	5	6
71-68	8	S	.20000	29	57		YY	8	7	0	0	0	1	8	7
71-68	8	S	.20000	29	58		YY	3	9	1	0	0	0	4	9
71-68	8	S	.20000	30	59		YY	5	8	1	0	0	0	4	7
71-68	8	S	.20000	30	60		YY			0	0	0	0	0	0

## DOMINANT LETHAL STUDY OF COMPOUND 71-68

## SODIUM ERYTHORBATE

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TEST MATERIAL	WEEK	S/M DOSE	MALE NO.	FE NO.	PREG.	IMPLANTS	EARLY DEATHS		LATE DEATHS		COPROTA LUTEA		
							L	R	L	R	L	R	
71-68	8	S 1.00000	31	61	Y	7	7	0	0	0	0	7	7
71-68	8	S 1.00000	31	62	Y	6	5	0	0	0	0	7	5
71-68	8	S 1.00000	32	63	Y	4	6	0	0	1	0	4	7
71-68	8	S 1.00000	32	64	Y	6	6	0	0	0	0	6	6
71-68	8	S 1.00000	33	65	Y	8	0	0	0	0	0	10	1
71-68	8	S 1.00000	33	66	Y	7	3	0	0	0	0	7	5
71-68	8	S 1.00000	34	67	Y	5	6	0	0	0	0	6	7
71-68	8	S 1.00000	34	68	Y	7	6	0	0	0	0	7	6
71-68	8	S 1.00000	35	69	Y	9	5	0	0	0	1	9	5
71-68	8	S 1.00000	35	70	Y	8	7	0	0	1	0	9	8
71-68	8	S 1.00000	36	71	N	0	0	0	0	0	0	0	0
71-68	8	S 1.00000	36	72	Y	5	7	1	3	1	2	5	7
71-68	8	S 1.00000	37	73	Y	8	7	0	0	0	0	8	7
71-68	8	S 1.00000	37	74	Y	5	8	0	1	1	0	5	8
71-68	8	S 1.00000	38	75	Y	6	4	0	0	0	0	8	4
71-68	8	S 1.00000	38	76	Y	9	5	0	0	1	0	7	5
71-68	8	S 1.00000	39	77	Y	7	5	0	0	0	2	8	7
71-68	8	S 1.00000	39	78	Y	8	6	0	0	0	0	9	1
71-68	8	S 1.00000	40	79	Y	9	0	0	0	0	0	5	6
71-68	8	S 1.00000	40	80	Y	5	6	0	0	0	0	5	6
71-68	8	S 5.00000	41	81	Y	6	1	0	0	0	0	6	9
71-68	8	S 5.00000	41	82	Y	7	6	0	0	1	0	7	6
71-68	8	S 5.00000	42	83	Y	11	3	0	0	1	0	11	3
71-68	8	S 5.00000	42	84	Y	7	5	1	1	0	0	7	5
71-68	8	S 5.00000	43	85	Y	7	5	0	0	0	0	7	5
71-68	8	S 5.00000	43	86	Y	6	8	0	0	1	0	6	8
71-68	8	S 5.00000	44	87	Y	8	5	0	0	0	0	9	5
71-68	8	S 5.00000	44	88	Y	9	5	0	0	0	0	9	5
71-68	8	S 5.00000	45	89	Y	6	5	0	0	0	0	6	5
71-68	8	S 5.00000	45	90	Y	5	7	0	0	1	0	5	7
71-68	8	S 5.00000	46	91	Y	4	9	0	0	1	1	4	9
71-68	8	S 5.00000	46	92	Y	8	5	0	0	1	0	8	6
71-68	8	S 5.00000	47	93	Y	6	4	1	0	0	0	6	8
71-68	8	S 5.00000	47	94	Y	3	9	0	1	0	0	4	9
71-68	8	S 5.00000	48	95	Y	9	6	0	0	1	1	9	6
71-68	8	S 5.00000	48	96	Y	8	6	0	0	0	3	8	6
71-68	8	S 5.00000	49	97	Y	5	10	0	0	0	0	5	11
71-68	8	S 5.00000	49	98	Y	6	5	0	1	1	0	6	7
71-68	8	S 5.00000	50	99	Y	5	6	0	0	0	0	5	7
71-68	8	S 5.00000	50	100	Y	5	6	0	0	0	0	6	6

TEST MATERIAL	WEEK	S/M	DOSE	MALE NO.	FEMAL NO.	REG.	IMPLANTS		EARLY DEATHS		LATE DEATHS		CORPORA LUTEA	
							L	R	L	R	L	R	L	R
TEM	8	S	.00020	11	21	Y	9	4	0	0	0	0	10	4
TEM	8	S	.00020	11	22	Y	7	5	0	0	0	0	7	5
TEM	8	S	.00020	12	23	Y	8	7	0	0	2	1	8	8
TEM	8	S	.00020	12	24	Y	9	5	0	0	0	1	9	6
TEM	8	S	.00020	13	25	Y	8	6	0	0	0	0	8	6
TEM	8	S	.00020	13	26	Y	4	10	0	0	3	1	4	10
TEM	8	S	.00020	14	27	Y	1	2	0	0	0	0	8	5
TEM	8	S	.00020	14	28	Y	9	5	0	0	1	1	9	5
TEM	8	S	.00020	15	29	Y	6	7	1	0	1	1	7	7
TEM	8	S	.00020	15	30	Y	5	6	0	0	0	1	6	7
TEM	8	S	.00020	16	31	Y	10	4	1	0	0	0	12	4
TEM	8	S	.00020	16	32	Y	6	5	0	0	0	0	6	5
TEM	8	S	.00020	17	33	N	0	0	0	0	0	0	0	0
TEM	8	S	.00020	17	34	Y	6	5	0	0	0	1	6	5
TEM	8	S	.00020	18	35	Y	3	10	0	0	0	0	3	10
TEM	8	S	.00020	18	36	Y	9	6	0	0	4	2	10	6
TEM	8	S	.00020	19	37	Y	0	1	0	0	0	0	3	10
TEM	8	S	.00020	19	38	Y	7	4	0	0	2	2	7	7
TEM	8	S	.00020	20	39	Y	3	10	0	0	1	1	3	10
TEM	8	S	.00020	20	40	Y	0	3	0	0	0	0	6	6

ARMITAGE TEST FOR A LINEAR TREND  
(1 DEGREE OF FREEDOM)PROPORTIONS FOR THE FERTILITY INDEX  
BASED ON THE DOSE LEVELS

	.2 G/KG		1 G/KG		5 G/KG		CHISQ (C-1)	CHISQ (1)	ARMTG CHISQ
WEEK	N PRG	N MTD	N PRG	N MTD	N PRG	N MTD			

## SINGLE TREATMENT

1	19	20	19	20	15	20	5.18	5.05	.13
2	20	20	19	20	20	20	2.03	.26	1.77
3	20	20	19	20	20	20	2.03	.26	1.77
4	20	20	20	20	20	20	0.00	0.00	0.00
5	17	20	20	20	20	20	6.32	2.50	3.82
6	20	20	20	20	18	20	4.14	4.04	.10
7	20	20	20	20	20	20	0.00	0.00	0.00
8	20	20	19	20	20	20	2.03	.26	1.77

## MULTIPLE TREATMENT

1	19	20	18	20	18	20	.44	.17	.26
2	20	20	20	20	20	20	0.00	0.00	0.00
3	20	20	20	20	20	20	0.00	0.00	0.00
4	20	20	19	20	20	20	2.03	.26	1.77
5	20	20	20	20	20	20	0.00	0.00	0.00
6	20	20	20	20	19	20	2.03	1.98	.05
7	19	20	20	20	20	20	2.03	.80	1.23

ARMITAGE TEST FOR A LINEAR TREND IN  
 (1 DEGREE OF FREEDOM) PROPORTIONS FOR THE FERTILITY INDEX  
 BASED ON THE LOGARITHMS OF THE DOSE LEVELS

WEEK	.2 G/KG		1 G/KG		5 G/KG		CHISQ (C-1)	CHISQ (1)	ARMTG CHISQ
	N	N	N	N	N	N			
	PRG	MTD	PRG	MTD	PRG	MTD			
SINGLE TREATMENT									
1	19	20	19	20	15	20	5.18	3.88	1.29
2	20	20	19	20	20	20	2.03	.00	2.03
3	20	20	19	20	20	20	2.03	.00	2.03
4	20	20	20	20	20	20	0.00	0.00	0.00
5	17	20	20	20	20	20	6.32	4.74	1.58
6	20	20	20	20	18	20	4.14	3.10	1.03
7	20	20	20	20	20	20	0.00	0.00	0.00
8	20	20	19	20	20	20	2.03	.00	2.03

	MULTIPLE TREATMENT									
1	19	20	18	20	18	20	.44	.33	.11	
2	20	20	20	20	20	20	0.00	0.00	0.00	
3	20	20	20	20	20	20	0.00	0.00	0.00	
4	20	20	19	20	20	20	2.03	.00	2.03	
5	20	20	20	20	20	20	0.00	0.00	0.00	
6	20	20	20	20	19	20	2.03	1.53	.51	
7	19	20	20	20	20	20	2.03	1.53	.51	

ARMITAGE TEST FOR A LINEAR TRE  
(2 DEGREES OF FREEDOM)PROPORTIONS FOR THE FERTILITY INDEX  
BASED ON THE DOSE LEVELS AND INCLUDING THE CONTROL GROUP

WEEK	CONTROL		.2 G/KG		1 G/KG		5 G/KG		ARMTG	CHISQ
	N	PRG	N	PRG	N	PRG	N	PRG	(C-1)	(1)
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## SINGLE TREATMENT

1	19	20	19	20	19	20	15	20	6.67	6.44	.23
2	20	20	20	20	19	20	20	20	3.04	.07	2.96
3	20	20	20	20	19	20	20	20	3.04	.07	2.96
4	19	20	20	20	20	20	20	20	3.04	.59	2.45
5	19	20	17	20	20	20	20	20	6.32	2.01	4.31
6	20	20	20	20	20	20	18	20	6.15	5.94	.21
7	19	20	20	20	20	20	20	20	3.04	.59	2.45
8	17	20	20	20	19	20	20	20	6.32	1.73	4.58

## MULTIPLE TREATMENT

1	20	20	19	20	18	20	18	20	2.35	1.03	1.32
2	19	20	20	20	20	20	20	20	3.04	.59	2.45
3	19	20	20	20	20	20	20	20	3.04	.59	2.45
4	20	20	20	20	19	20	20	20	3.04	.07	2.96
5	19	20	20	20	20	20	20	20	3.04	.59	2.45
6	20	20	20	20	20	20	19	20	3.04	2.93	.10
7	20	20	19	20	20	20	20	20	3.04	.45	2.59

## T-TEST OF THE NUMBER OF IMPLANTATIONS IN PREGNANT FEMALES

WEEK	CONTROL				71-68 .2 G/KG				71-68 1 G/KG				71-68 5 G/KG				TEM .2 MG/KG						
	N PRG	MEAN	STD DEV	N PRG	MEAN	STD DEV	DF T	N PRG	MEAN	STD DEV	DF T	N PRG	MEAN	STD DEV	DF T	N PRG	MEAN	STD DEV	DF T				
SINGLE TREATMENT																							
1	19	11.47	2.20	19	9.32	4.71	36	1.809	19	10.53	2.52	36	1.234	15	10.47	2.53	32	1.242	14	7.93	3.89	31	3.327
2	20	10.45	3.47	20	12.50	1.85	38	2.331	19	12.05	2.12	37	1.729	20	12.35	1.50	38	2.248	9	3.11	2.15	27	5.827
3	20	12.20	2.26	20	12.95	1.28	38	1.291	19	11.84	2.79	37	.441	20	13.25	1.77	38	1.634	17	2.53	3.18	35	10.767
4	19	11.84	3.53	20	12.05	3.15	37	.194	20	12.85	2.03	37	1.099	20	12.25	2.86	37	.397	12	4.58	4.94	29	4.772
5	19	12.42	1.26	17	12.41	3.34	34	.011	20	11.45	1.93	37	1.848	20	12.05	2.39	37	.601	19	10.32	3.51	36	2.459
6	20	11.40	2.52	20	11.55	1.76	38	.218	20	11.55	2.46	38	.190	18	11.50	2.55	36	.121	20	12.30	2.30	38	1.180
7	19	10.26	3.72	20	11.75	1.74	37	1.610	20	12.35	1.60	37	2.294	20	12.60	1.76	37	2.526	20	10.50	2.86	37	.224
8	17	11.76	4.18	20	12.50	1.50	35	.735	19	12.00	2.05	34	.218	20	12.35	1.90	35	.563	19	11.32	4.22	34	.320
MULTIPLE TREATMENT																							
1	20	12.60	1.57	19	13.05	1.84	37	.828	18	12.17	2.64	36	.622	18	12.89	2.00	36	.498					
2	19	12.37	1.98	20	12.25	1.83	37	.194	20	12.45	2.68	37	.108	20	13.55	1.50	37	2.107					
3	19	12.32	1.80	20	12.60	2.26	37	.434	20	12.40	2.23	37	.129	20	13.45	1.32	37	2.257					
4	20	11.75	2.20	20	12.15	2.70	38	.514	19	12.11	2.05	37	.521	20	11.90	1.97	38	.227					
5	19	12.32	2.29	20	12.10	1.94	37	.318	20	12.95	1.76	37	.973	20	11.80	1.74	37	.796					
6	20	11.20	2.95	20	11.60	3.41	38	.397	20	11.50	2.76	38	.332	19	12.68	2.52	37	1.686					
7	20	13.20	1.36	19	11.84	3.39	37	1.658	20	12.25	1.74	38	1.921	20	12.05	2.67	38	1.719					

REGRESSION FITS OF THE NUMBER, U, OF IMPLANTATIONS ON 1) DOSE AND 2) LOG DOSE  
( PREDICTED U = A + B\*x )  
CONTROL GROUP EXCLUDED

WEEK	X	N	XBAR	SD X	UBAR	SD U	B	A	TB	DF	VARU X	CV U	VARB	VARA	VARUBAR
SINGLE TREATMENT															
1	DOSE	53	1.85	2.03	10.08	3.46	.163	9.774	.688	51	12.0779	.3449	.0564	.4198	.2279
	LOG DOSE	53	-.12	1.30	10.08	3.46	-.374	10.121	1.012	51	11.9503	.3431	.1369	.2275	.2255
2	DOSE	59	2.08	2.13	12.31	1.81	-.002	12.301	.016	57	3.3422	.1486	.0127	.1118	.0566
	LOG DOSE	59	.00	1.34	12.31	1.81	-.047	12.305	-.260	57	3.3383	.1485	.0322	.0566	.0566
3	DOSE	59	2.08	2.13	12.69	2.09	.153	12.376	1.195	57	4.3217	.1638	.0164	.1446	.0732
	LOG DOSE	59	.00	1.34	12.69	2.09	.093	12.695	.452	57	4.4142	.1655	.0426	.0748	.0748
4	DOSE	60	2.07	2.12	12.38	2.70	-.020	12.425	-.120	58	7.4151	.2199	.0280	.2433	.1236
	LOG DOSE	60	.00	1.33	12.38	2.70	.062	12.383	.232	58	7.4101	.2198	.0715	.1235	.1235
5	DOSE	57	2.16	2.13	11.95	2.56	-.007	11.931	.046	55	6.6696	.2162	.0263	.2403	.1170
	LOG DOSE	57	.08	1.31	11.95	2.56	-.099	11.956	-.373	55	6.6530	.2159	.0697	.1172	.1167
6	DOSE	58	1.97	2.08	11.53	2.23	-.011	11.556	-.077	56	5.0786	.1954	.0206	.1671	.0876
	LOG DOSE	58	-.06	1.31	11.53	2.23	-.015	11.534	-.067	56	5.0787	.1954	.0517	.0877	.0876
7	DOSE	60	2.07	2.12	12.23	1.71	.140	11.944	1.341	58	2.8886	.1389	.0109	.0948	.0481
	LOG DOSE	60	.00	1.33	12.23	1.71	.264	12.233	1.591	58	2.8536	.1381	.0275	.0476	.0476
8	DOSE	59	2.08	2.13	12.29	1.81	-.006	12.276	.053	57	3.3350	.1486	.0127	.1116	.0565
	LOG DOSE	59	.00	1.34	12.29	1.81	-.047	12.288	-.260	57	3.3312	.1485	.0322	.0565	.0565
MULTIPLE TREATMENTS															
1	DOSE	55	2.03	2.11	12.71	2.17	.032	12.644	.227	53	4.8132	.1726	.0199	.1699	.0875
	LOG DOSE	55	-.03	1.33	12.71	2.17	-.055	12.707	-.247	53	4.8123	.1726	.0502	.0875	.0875
2	DOSE	60	2.07	2.12	12.75	2.11	.272	12.187	2.160	58	4.2009	.1608	.0159	.1378	.0700
	LOG DOSE	60	.00	1.33	12.75	2.11	.404	12.750	1.995	58	4.2474	.1616	.0410	.0708	.0708
3	DOSE	60	2.07	2.12	12.82	2.00	.205	12.394	1.686	58	3.8949	.1540	.0147	.1278	.0649
	LOG DOSE	60	.00	1.33	12.82	2.00	.264	12.817	1.351	58	3.9614	.1553	.0382	.0660	.0660
4	DOSE	59	2.08	2.13	12.05	2.23	-.052	12.159	-.374	57	5.0551	.1866	.0192	.1691	.0857
	LOG DOSE	59	.00	1.34	12.05	2.23	-.078	12.051	-.352	57	5.0565	.1866	.0488	.0857	.0857
5	DOSE	60	2.07	2.12	12.28	1.85	-.135	12.562	-.191	58	3.4027	.1502	.0129	.1117	.0567
	LOG DOSE	60	.00	1.33	12.28	1.85	-.093	12.283	-.509	58	3.4704	.1517	.0335	.0578	.0578
6	DOSE	59	2.02	2.10	11.92	2.93	.248	11.415	1.367	57	8.4354	.2438	.0330	.2771	.1430
	LOG DOSE	59	-.03	1.32	11.92	2.93	.333	11.924	1.148	57	8.5150	.2449	.0843	.1444	.1443
7	DOSE	59	2.10	2.12	12.05	2.63	.012	12.026	.072	57	7.0318	.2200	.0269	.2378	.1192
	LOG DOSE	59	.03	1.32	12.05	2.63	.063	12.049	.239	57	7.0254	.2199	.0696	.1191	.1191

REGRESSION FITS OF THE NUMBER, U, OF IMPLANTATIONS ON DOSE  
( PREDICTED U = A + B\*x )      CONTROL GROUP INCLUDED

WEEK	X	N	XBAR	SD X	*UBAR	SD U	B	A	TB	DF	VARU X	CV U	VARB	VARA	VARUBAR
SINGLE TREATMENT															
1	DOSE	72	1.36	1.92	10.44	3.22	-.004	10.450	-.020	70	10.5110	.3104	.0401	.2200	.1460
2	DOSE	79	1.56	2.05	11.84	2.46	.177	11.559	1.314	77	5.9809	.2066	.0182	.1199	.0757
3	DOSE	79	1.56	2.05	12.57	2.13	.170	12.305	1.456	77	4.4663	.1681	.0136	.0895	.0565
4	DOSE	79	1.57	2.04	12.25	2.91	.033	12.201	.205	77	8.5530	.2387	.0262	.1729	.1083
5	DOSE	76	1.62	2.07	12.07	2.31	-.040	12.130	-.306	74	5.3806	.1922	.0168	.1151	.0708
6	DOSE	78	1.46	1.99	11.50	2.29	.004	11.494	.030	76	5.3355	.2009	.0175	.1059	.0684
7	DOSE	79	1.57	2.04	11.76	2.48	.294	11.298	2.194	77	5.8478	.2056	.0179	.1182	.0740
8	DOSE	76	1.62	2.07	12.17	2.51	.050	12.091	.353	74	6.3781	.2075	.0199	.1360	.0839
MULTIPLE TREATMENTS															
1	DOSE	75	1.49	2.02	12.68	2.02	.036	12.626	.311	73	4.1359	.1604	.0137	.0856	.0551
2	DOSE	79	1.57	2.04	12.66	2.07	.256	12.257	2.285	77	4.0839	.1596	.0125	.0825	.0517
3	DOSE	79	1.57	2.04	12.70	1.96	.212	12.364	1.991	77	3.6894	.1513	.0113	.0746	.0467
4	DOSE	79	1.56	2.05	11.97	2.21	-.013	11.995	-.106	77	4.9597	.1860	.0151	.0994	.0628
5	DOSE	79	1.57	2.04	12.29	1.95	-.113	12.468	-1.043	77	3.7945	.1585	.0116	.0767	.0480
6	DOSE	79	1.51	2.01	11.73	2.93	.269	11.330	1.649	77	8.3971	.2470	.0265	.1665	.1063
7	DOSE	79	1.57	2.05	12.34	2.42	-.101	12.500	-.751	77	5.8761	.1964	.0180	.1185	.0744

T-TEST OF THE (TRANSFORMED) PRE-IMPLANTATION LOSSES IN PREGNANT FEMALES  
 (LOSSES TAKEN AS A SUBSET OF CORPORA LUTEA)

WEEK	CONTROL			71-68 .2 G/KG			71-68 1 G/KG			71-68 5 G/KG			TEM .2 MG/KG										
	N PRG	MEAN	STD DEV	N PRG	MEAN	STD DEV	DF	T	N PRG	MEAN	STD DEV	DF	T	N PRG	MEAN	STD DEV	DF	T					
SINGLE TREATMENT																							
1	19	.68	.35	19	.99	.74	36	1.648	19	.83	.41	36	1.158	15	.89	.42	32	1.556	14	1.23	.65	31	3.127
2	20	.89	.59	20	.49	.36	38	2.578	19	.60	.41	37	1.739	20	.51	.33	38	2.503	9	2.05	.44	27	5.208
3	20	.61	.43	20	.53	.33	38	.627	19	.59	.47	37	.105	20	.51	.32	38	.818	17	2.14	.58	35	9.224
4	19	.73	.58	20	.65	.53	37	.443	20	.52	.37	37	1.359	20	.67	.46	37	.353	12	1.96	.68	29	5.385
5	19	.64	.24	17	.67	.54	34	.266	20	.68	.35	37	.441	20	.59	.42	37	.399	19	1.00	.62	36	2.383
6	20	.68	.40	20	.62	.37	38	.491	20	.70	.39	38	.148	18	.54	.44	36	1.080	20	.55	.41	38	1.070
7	19	.82	.65	20	.68	.30	37	.836	20	.52	.28	37	1.883	20	.49	.32	37	2.034	20	.86	.54	37	.223
8	17	.63	.65	20	.47	.26	35	1.031	19	.53	.30	34	.600	20	.53	.37	35	.599	19	.77	.69	34	.615
MULTIPLE TREATMENT																							
1	20	.44	.29	19	.56	.33	37	1.179	18	.72	.40	36	2.431	18	.59	.27	36	1.566					
2	19	.49	.32	20	.64	.41	37	1.299	20	.59	.47	37	.783	20	.41	.18	37	.914					
3	19	.48	.24	20	.67	.40	37	1.771	20	.53	.30	37	.540	20	.56	.29	37	.915					
4	20	.67	.40	20	.66	.47	38	.098	19	.63	.35	37	.319	20	.66	.33	38	.068					
5	19	.61	.38	20	.66	.38	37	.412	20	.60	.32	37	.103	20	.54	.29	37	.575					
6	20	.70	.47	20	.81	.57	38	.663	20	.69	.47	38	.067	19	.49	.41	37	1.454					
7	20	.49	.24	19	.66	.53	37	1.290	20	.68	.30	38	2.186	20	.60	.45	38	.925					

## T-TEST OF THE NUMBER OF DEAD IMPLANTS

WEEK	CONTROL			71-68			.2 G/KG			71-68			1 G/KG			71-68			5 G/KG			TEM			.2 MG/KG		
	N	PRG	MEAN	STD DEV	N	PRG	MEAN	STD DEV	DF	T	N	PRG	MEAN	STD DEV	DF	T	N	PRG	MEAN	STD DEV	DF	T	N	PRG	MEAN	STD DEV	DF

## SINGLE TREATMENT

1	19	2.00	3.27	19	1.47	1.22	36	.658	19	1.95	2.70	36	.054	15	1.53	2.42	32	.462	14	6.07	2.73	31	3.786
2	20	.50	.83	20	1.85	2.16	38	2.611	19	1.05	1.51	37	1.429	20	.75	.85	38	.942	9	3.11	2.15	27	4.786
3	20	1.40	1.60	20	1.05	1.10	38	.805	19	.89	1.10	37	1.142	20	.75	1.21	38	1.448	17	1.88	1.69	35	.890
4	19	1.58	2.24	20	1.35	2.50	37	.301	20	1.05	1.23	37	.918	20	1.00	1.17	37	1.018	12	2.17	1.99	29	.741
5	19	.84	1.21	17	1.18	1.24	34	.818	20	1.05	1.39	37	.495	20	.90	.72	37	.182	19	8.58	3.67	36	8.721
6	20	1.30	1.63	20	.90	1.02	38	.932	20	.65	.99	38	1.528	18	.89	1.28	36	.860	20	2.45	3.36	38	1.377
7	19	1.37	2.95	20	.80	1.94	37	.715	20	.80	1.06	37	.810	20	.65	1.60	37	.953	20	.85	1.27	37	.720
8	17	.41	.71	20	1.10	.72	35	2.916	19	.79	1.65	34	.872	20	.95	1.05	35	1.790	19	1.47	1.78	34	2.303

## MULTIPLE TREATMENT

1	20	1.25	1.89	19	1.74	2.13	37	.756	18	.50	.62	36	1.607	18	.67	1.19	36	1.125
2	19	1.21	2.15	20	1.45	2.19	37	.345	20	1.35	1.60	37	.231	20	.70	.98	37	.963
3	19	.79	1.03	20	1.05	1.36	37	.672	20	1.05	1.19	37	.728	20	.65	.59	37	.522
4	20	1.70	1.59	20	1.10	1.33	38	1.292	19	1.00	1.25	37	1.523	20	.50	.76	38	3.040
5	19	1.00	1.05	20	.80	1.06	37	.592	20	.90	.91	37	.317	20	1.20	1.77	37	.427
6	20	.80	1.01	20	1.20	1.28	38	1.098	20	.85	.88	38	.168	19	1.00	1.73	37	.444
7	20	.55	.76	19	.58	.61	37	.131	20	.70	.80	38	.608	20	.50	.76	38	.208

ARMITAGE TEST FOR A LINEAR TREND  
(1 DEGREE OF FREEDOM)PROPORTIONS FOR THE DEATH INDEX  
BASED ON THE DOSE LEVELS

	.2 G/KG		1 G/KG		5 G/KG		CHISO (C-1)	CHISO (1)	ARMTG CHISO
WEEK	N	N	N	N	WDI	PRG			
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SINGLE TREATMENT

1	15	19	15	19	7	15	5.32	5.17	.15
2	14	20	9	19	11	20	2.13	.26	1.87
3	12	20	9	19	7	20	2.51	2.18	.32
4	10	20	11	20	12	20	.40	.35	.05
5	11	17	12	20	14	20	.44	.29	.15
6	10	20	7	20	9	18	1.19	.14	1.05
7	5	20	10	20	6	20	3.08	.10	2.98
8	17	20	7	19	12	20	9.51	.35	9.17

MULTIPLE TREATMENT

1	12	19	8	18	6	18	3.38	2.58	.81
2	12	20	12	20	8	20	2.14	2.09	.05
3	11	20	11	20	12	20	.14	.13	.00
4	12	20	12	19	7	20	3.77	3.53	.24
5	10	20	12	20	10	20	.54	.07	.47
6	13	20	12	20	8	19	2.28	2.27	.01
7	10	19	10	20	7	20	1.44	1.44	.00

ARMITAGE TEST FOR A LINEAR TRE  
(1 DEGREE OF FREEDOM)PROPORTIONS FOR THE DEATH INDEX  
BASED ON THE LOGARITHMS OF THE DOSE LEVELS

WEEK	.2 G/KG		1 G/KG		5 G/KG		CHISQ (C-1)	CHISQ (1)	ARMTG CHISQ
	N	WDI	N	WDI	N	WDI			
	PRG		PRG		PRG				
SINGLE TREATMENT									
1	15	19	15	19	7	15	5.32	3.82	1.50
2	14	20	9	19	11	20	2.13	.92	1.21
3	12	20	9	19	7	20	2.51	2.51	.00
4	10	20	11	20	12	20	.40	.40	.00
5	11	17	12	20	14	20	.44	.13	.31
6	10	20	7	20	9	18	1.19	.00	1.19
7	5	20	10	20	6	20	3.08	.11	2.97
8	17	20	7	19	12	20	9.51	2.63	6.89

	MULTIPLE TREATMENT								
1	12	19	8	18	6	18	3.38	3.31	.07
2	12	20	12	20	8	20	2.14	1.61	.54
3	11	20	11	20	12	20	.14	.10	.03
4	12	20	12	19	7	20	3.77	2.51	1.27
5	10	20	12	20	10	20	.54	.00	.54
6	13	20	12	20	8	19	2.28	2.05	.22
7	10	19	10	20	7	20	1.44	1.24	.20

ARMITAGE TEST FOR A LINEAR TREND  
(2 DEGREES OF FREEDOM)

PROPORTIONS FOR THE DEATH INDEX

BASED ON THE DOSE LEVELS AND INCLUDING THE CONTROL GROUP

WEEK	CONTROL			.2 G/KG			1 G/KG			5 G/KG			
	N WDI	N PRG		N WDI	N PRG		N WDI	N PRG		N WDI	N PRG (C-1)	CHISQ (1)	CHISQ ARMTG

## SINGLE TREATMENT

1	14	19		15	19		15	19		7	15	5.53	4.90	.63
2	7	20		14	20		9	19		11	20	5.15	.11	5.04
3	12	20		12	20		9	19		7	20	3.44	3.07	.37
4	11	19		10	20		11	20		12	20	.45	.19	.26
5	8	19		11	17		12	20		14	20	3.48	1.60	1.88
6	12	20		10	20		7	20		9	18	2.55	.03	2.52
7	10	19		5	20		10	20		6	20	4.82	.75	4.06
8	5	17		17	20		7	19		12	20	14.41	.21	14.21

## MULTIPLE TREATMENT

1	10	20		12	19		8	18		6	18	3.42	2.33	1.09
2	7	19		12	20		12	20		8	20	3.70	.57	3.13
3	8	19		11	20		11	20		12	20	1.36	.65	.71
4	15	20		12	20		12	19		7	20	6.97	6.18	.78
5	11	19		10	20		12	20		10	20	.66	.15	.51
6	11	20		13	20		12	20		8	19	2.28	1.75	.53
7	9	20		10	19		10	20		7	20	1.44	1.09	.35

PROBIT ANALYSIS OF THE PROPORTION REGNANT FEMALES WITH ONE OR MORE DEAD IMPLANTS  
PROBIT = A + B( LOG DOSE )

WEEK	B	A	CHISQ	DF
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- SINGLE TREATMENT

1	-.639	5.516	1.24	1
2	-.278	5.195	1.24	1
3	-.457	4.934	.00	1
4	.181	5.126	.00	1
5	.111	5.380	.31	1
6	-.010	4.870	1.19	1
7	.099	4.614	2.98	1
8	-.488	5.294	7.35	1

MULTIPLE TREATMENT

1	-.550	4.921	.06	1
2	-.363	5.085	.53	1
3	.091	5.168	.03	1
4	-.456	5.065	1.27	1
5	-.000	5.084	.54	1
6	-.418	5.148	.21	1
7	-.323	4.895	.21	1

T-TEST OF THE (TRANSFORMED) NUMBER OF DEAD IMPLANTS  
(DEAD IMPLANTS TAKEN AS A SUBSET OF IMPLANTS)

## CONTROL GROUP ANOVA FOR THE NUMBER OF PREGNANT FEMALES

WEEK	BETWEEN MALES			WITHIN MALES			TOTAL		
	SUMSQ	DF	MEANSQ	SUMSQ	DF	MEANSQ	SUMSQ	DF	F
SINGLE TREATMENT									
1	.450	9	.050	.500	10	.050	.950	19	1.000
2	0.000	9	0.000	0.000	10	0.000	0.000	19	I
3	0.000	9	0.000	0.000	10	0.000	0.000	19	I
4	.450	9	.050	.500	10	.050	.950	19	1.000
5	.450	9	.050	.500	10	.050	.950	19	1.000
6	0.000	9	0.000	0.000	10	0.000	0.000	19	I
7	.450	9	.050	.500	10	.050	.950	19	1.000
8	1.050	9	.117	1.500	10	.150	2.550	19	.778
MULTIPLE TREATMENT									
1	0.000	9	0.000	0.000	10	0.000	0.000	19	I
2	.450	9	.050	.500	10	.050	.950	19	1.000
3	.450	9	.050	.500	10	.050	.950	19	1.000
4	0.000	9	0.000	0.000	10	0.000	0.000	19	I
5	.450	9	.050	.500	10	.050	.950	19	1.000
6	0.000	9	0.000	0.000	10	0.000	0.000	19	I
7	0.000	9	0.000	0.000	10	0.000	0.000	19	I

## CONTROL GROUP ANOVA FOR THE NUMBER OF IMPLANTATIONS PER PREGNANT FEMALE

WEEK	BETWEEN MALES			WITHIN MALES			TOTAL			F
	SUMSQ	DF	MEANSQ	SUMSQ	DF	MEANSQ	SUMSQ	DF	-----	
SINGLE TREATMENT										
1	41.710	9	4.634	46.000	9	5.111	87.710	18	.	.907
2	104.450	9	11.606	124.500	10	12.450	228.950	19	.	.932
3	77.200	9	8.578	20.000	10	2.000	97.200	19	.	4.289
4	89.247	9	9.916	135.500	9	15.056	224.747	18	.	.659
5	18.147	9	2.016	10.500	9	1.167	28.647	18	.	1.728
6	49.800	9	5.533	71.000	10	7.100	120.800	19	.	.779
7	125.710	9	13.968	124.000	9	13.778	249.710	18	.	1.014
8	106.000	9	11.778	174.000	7	24.857	280.000	16	.	.474
MULTIPLE TREATMENT										
1	33.800	9	3.756	13.000	10	1.300	46.800	19	.	2.889
2	55.187	9	6.132	15.500	9	1.722	70.687	18	.	3.560
3	27.750	9	3.083	31.000	9	3.444	58.750	18	.	.895
4	37.250	9	4.139	54.500	10	5.450	91.750	19	.	.759
5	54.628	9	6.070	39.500	9	4.389	94.128	18	.	1.383
6	31.200	9	3.467	134.000	10	13.400	165.200	19	.	.259
7	21.200	9	2.356	14.000	10	1.400	35.200	19	.	1.683

## CONTROL GROUP ANOVA FOR THE IMPLANTATION LOSS PER PREGNANT FEMALE

WEEK	BETWEEN MALES			WITHIN MALES			TOTAL			F
	SUMSW	DF	MEANSQ	SUMSQ	DF	MEANSQ	SUMSQ	DF		
SINGLE TREATMENT										
1	15.347	9	1.705	25.500	9	2.833	40.847	18		.602
2	267.050	9	29.672	309.500	10	30.950	576.550	19		.959
3	85.450	9	9.494	23.500	10	2.350	108.950	19		4.040
4	88.000	9	9.778	90.000	9	10.000	178.000	18		.978
5	10.727	9	1.192	10.500	9	1.167	21.227	18		1.022
6	14.000	9	1.556	45.000	10	4.500	59.000	19		.346
7	59.027	9	6.559	87.500	9	9.722	146.527	18		.675
8	49.082	9	5.454	77.500	7	11.071	126.582	16		.493
MULTIPLE TREATMENT										
1	7.800	9	.867	15.000	10	1.500	22.800	19		.578
2	19.710	9	2.190	16.000	9	1.778	35.710	18		1.232
3	3.640	9	.404	5.000	9	.556	8.640	18		.728
4	24.450	9	2.717	38.500	10	3.850	62.950	19		.706
5	29.510	9	3.279	53.000	9	5.889	82.510	18		.557
6	28.000	9	3.111	55.000	10	5.500	83.000	19		.566
7	7.250	9	.806	8.500	10	.850	15.750	19		.948

## CONTROL GROUP ANOVA FOR THE NUMBER OF DEAD IMPLANTS PER PREGNANT FEMALE

WEEK	BETWEEN MALES			WITHIN MALES			TOTAL			F
	SUMSQ	DF	MEANSQ	SUMSQ	DF	MEANSQ	SUMSQ	DF		
SINGLE TREATMENT										
1	178.840	9	19.871	20.000	9	2.222	198.840	18		8.942
2	4.000	9	.444	9.000	10	.900	13.000	19		.494
3	18.800	9	2.089	30.000	10	3.000	48.800	19		.696
4	48.750	9	5.417	42.000	9	4.667	90.750	18		1.161
5	12.560	9	1.396	14.000	9	1.556	26.560	18		.897
6	21.200	9	2.356	29.000	10	2.900	50.200	19		.812
7	67.927	9	7.547	88.500	9	9.833	156.427	18		.768
8	3.683	9	.409	4.500	7	.643	8.183	16		.636
MULTIPLE TREATMENT										
1	31.250	9	3.472	36.500	10	3.650	67.750	19		.951
2	29.688	9	3.299	53.500	9	5.944	83.187	18		.555
3	8.688	9	.965	10.500	9	1.167	19.187	18		.827
4	22.200	9	2.467	26.000	10	2.600	48.200	19		.949
5	7.547	9	.839	12.500	9	1.389	20.047	18		.604
6	13.200	9	1.467	6.000	10	.600	19.200	19		2.444
7	4.450	9	.494	6.500	10	.650	10.950	19		.761

## CONTROL GROUP ANOVA FOR THE RATIO OF DEAD IMPLANTS TO TOTAL IMPLANTS PER PREGNANT FEMALE

WEEK	BETWEEN MALES			WITHIN MALES			TOTAL			F
	SUMSQ	DF	MEANSQ	SUMSQ	DF	MEANSQ	SUMSQ	DF	-----	
SINGLE TREATMENT										
1	.703	9	.078	.120	9	.013	.823	18		5.871
2	.404	9	.045	.549	10	.055	.953	19		.817
3	.112	9	.012	.168	10	.017	.280	19		.738
4	.305	9	.034	.200	9	.022	.505	18		1.524
5	.084	9	.009	.081	9	.009	.166	18		1.040
6	.163	9	.018	.151	10	.015	.314	19		1.201
7	.881	9	.098	.806	9	.090	1.687	18		1.093
8	.023	9	.003	.028	7	.004	.051	16		.633
MULTIPLE TREATMENT										
1	.172	9	.019	.208	10	.021	.380	19		.916
2	.200	9	.022	.334	9	.037	.535	18		.599
3	.057	9	.006	.083	9	.009	.141	18		.689
4	.145	9	.016	.115	10	.012	.260	19		1.403
5	.072	9	.008	.139	9	.015	.211	18		.521
6	.102	9	.011	.052	10	.005	.154	19		2.186
7	.032	9	.004	.049	10	.005	.082	19		.731

## T-TEST OF THE NUMBER OF CORPORA LUTEA IN PREGNANT FEMALES

WEEK	CONTROL			71-68 .2 G/KG						71-68 1 G/KG						71-68 5 G/KG						TEM .2 MG/KG			
	N PRG	MEAN	STD DEV	N PRG	MEAN	STD DEV	DF	T	N PRG	MEAN	STD DEV	DF	T	N PRG	MEAN	STD DEV	DF	T	N PRG	MEAN	STD DEV	DF	T		
SINGLE TREATMENT																									
1	19	13.00	2.26	19	12.79	2.76	36	.257	19	12.58	1.74	36	.643	15	12.87	1.55	32	.195	14	12.29	2.05	31	.932		
2	20	13.60	3.57	20	13.35	1.09	38	.299	19	13.37	1.07	37	.271	20	13.25	1.29	38	.412	9	12.11	2.52	27	1.125		
3	20	13.65	1.46	20	14.00	1.17	38	.836	19	13.05	1.65	37	1.199	20	14.25	2.17	38	1.025	17	11.76	2.86	35	2.581		
4	19	13.84	1.74	20	13.60	1.73	37	.436	20	13.90	1.45	37	.113	20	13.95	1.70	37	.196	12	14.08	2.15	29	.343		
5	19	13.63	1.42	17	14.00	1.73	34	.700	20	12.90	1.29	37	1.682	20	13.35	1.79	37	.543	19	14.00	2.13	36	.626		
6	20	12.90	1.89	20	12.85	1.39	38	.095	20	13.10	1.68	38	.354	18	12.50	1.42	36	.730	20	13.35	1.27	38	.885		
7	19	12.42	1.71	20	13.25	2.07	37	1.358	20	13.15	1.35	37	1.482	20	13.40	1.35	37	1.988	20	13.10	2.31	37	1.037		
8	17	13.12	1.93	20	13.10	1.29	35	.033	19	12.79	1.72	34	.539	20	13.35	1.27	35	.438	19	13.58	1.50	34	.804		
MULTIPLE TREATMENT																									
1	20	13.20	1.24	19	14.21	1.75	37	2.089	18	14.00	2.57	36	1.243	18	13.89	1.57	36	1.510							
2	19	13.11	1.56	20	13.95	2.14	37	1.403	20	13.95	1.90	37	1.511	20	13.95	1.54	37	1.703							
3	19	12.89	1.56	20	14.40	2.54	37	2.214	20	13.25	2.02	37	.612	20	14.60	1.96	37	2.999							
4	20	13.30	1.53	20	13.85	1.73	38	1.068	19	13.42	1.61	37	.241	20	13.40	2.48	38	.154							
5	19	13.68	2.06	20	13.65	1.57	37	.059	20	14.25	2.31	37	.806	20	12.60	1.19	37	2.029							
6	20	12.70	1.69	20	14.25	2.63	38	2.216	20	13.15	1.57	38	.874	19	13.58	1.39	37	1.771							
7	20	13.95	1.67	19	13.21	1.58	37	1.418	20	13.75	2.12	38	.331	20	13.35	1.84	38	1.079							